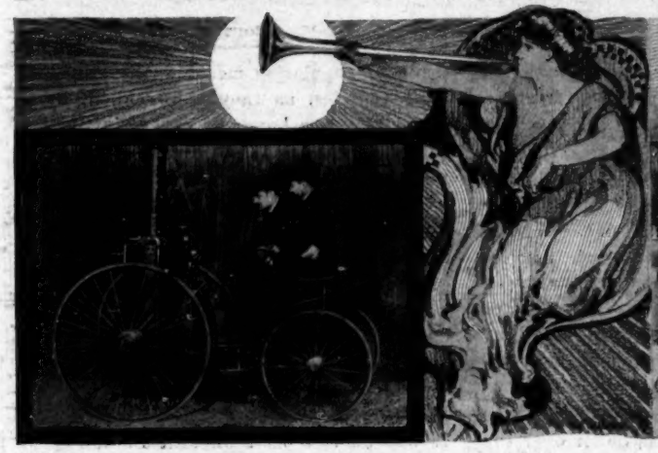
VOL. XIII No. 4 CHICAGO, JANUARY 23, 1908 $2.00 PER YEAR

Entered as second-class matter, September 19, 1899, at the postoffice at Chicago, Ill., under act of March 3, 1879.

MOTOR AGE

MOTOR BUILDING, STEP BY STEP, SINCE 1880



1882—FIRST STEAM DE DION-BOUTON VEHICLE

LATEST DE DION GASOLINE PRODUCT—1907

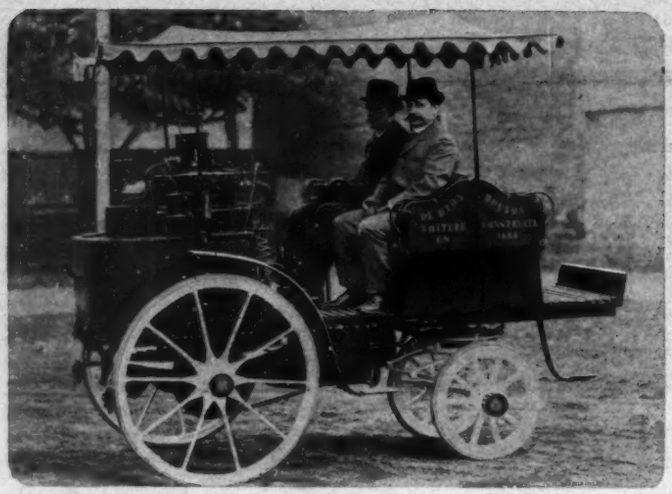
IT WAS New Year's eve; the last minutes of 1880 were rapidly evacuating for the inrushing moments of 1881. Paris streets were jubilant. On the boulevards throngs filled every square, cafes were crowded to overflowing and on either side of the brilliantly lighted pavements were interminable lines of stalls or booths in which cheap toys were offered on sale as New Year gifts. Society and labor rubbed elbows in the ceaseless promenade in front of the stalls; centimes and francs found ready exchange with the anxious venders. Vivacious Paris was at its zenith.

In such a setting was the inception of one of the greatest motor car industries in France, if not in the whole world. On that New Year's eve France—now mighty France in the motoring world—planted its feet firmly on the motoring infant and gripped it so tightly as to hold it in the van for more than two decades. Among those jostling Parisians was one known throughout the city as a man-about-town, one of the expert duelists of the nobility, a scion of noble lineage, and a direct offspring of one of the noblest houses of Paris. While passing a few idle moments before hastening to the opening of a New Year's ball he paused in front of a stall in which were stored miniature steam toys, chief among which were little engines with glass cylinders within which the piston could be seen moving back and forward by means of steam pressure. Struck with the toys, the buyer commented, "Why not make ordinary carriages run in the same way?" and in this sentence did Count Albert de Dion record his first determination to build road carriages that would travel by mechanical means. Hurried inquiries regarding the maker of the toy brought the information that M. Bouton, who worked in a little factory in one of the industrial quarters of the city, was the maker, and to him Count de Dion made his way in the course of a couple of days.

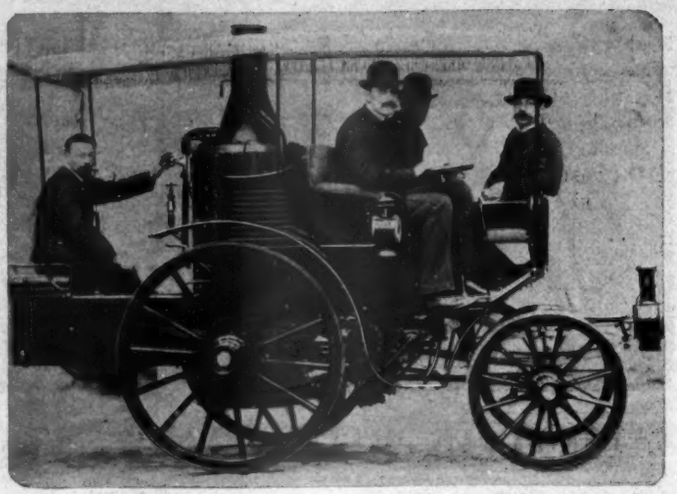
The visit was brief and informal. The count offered to supply the money if M. Bouton would build a real steam carriage. First came an objection: the steam boiler was too heavy for road vehicles. "Very well," replied the count, "then we must invent one." Thus began the associations between Count de Dion and M. Bouton; thus were brought together two men who have become pillars in French motoring history; then were formed acquaintances that have been inseparable ever since; thus began the business of de Dion-Bouton which is now associated with the biggest motor car factory in France, one that regularly employs 3,000 workmen and which last year manufactured 3,200 motor cars of pleasure and commercial lines and in addition built for public purchase 3,600 de Dion-Bouton motors of one size or another that are now used in motor boats, factories, dirigible balloons and a score of other fields in which the explosion motor has supplanted steam or electricity. In that little workshop aristocrat and laborer met face to face, brought together by the irrepressible hand of fate; within those four small walls money and brains shook hands; mechanical engineering and financial engineering became acquainted; each found his affinity.

1888, WINNER OF FIRST MOTOR CAR RACE

Acquaintance made, business began. A small workshop was engaged and M. Bouton soon was busied in designing a steam boiler with a maximum of heating surface and a minimum of volume; the result of which effort was the early appearance of a



De Dion-Bouton's Steam Dog Cart



De Dion-Bouton Steam Phaeton

—1885—

vertical water-tube generator of high steaming capacity and which since then has done so much for marine navigation and road locomotion. When the first one was completed, it was the only one of its type in existence. Its kind was used for torpedo boat service, but in motoring lay its true field. With the boiler designed it was not long before improvised road carriages were constructed to carry the boiler as well as the inventor. History has drawn a veil over these pioneer efforts; the earliest body blue prints—if there ever were any—have been destroyed and not until 1883 did Paris behold the first de Dion-Bouton. The count startled his court followers by appearing in a most ridiculous—so the people thought—four-wheel steam carriage on the city boulevards. Between two high front wheels was a vertical boiler with high smokestack and over the smaller rear wheels, used for steering, was a low seat for two. The drive from the engine shaft to each of the big driving wheels was by broad leather belt. On this pioneer quadricycle Count de Dion made many miles, in spite of his actions being looked upon as a good indication of mental degeneracy by many of his friends; further, in spite of this opposition, he sold models of this machine to others who caught his spirit and who had to battle with their friends to avoid being put under legal restraint for being so insane as to purchase a steam de Dion-Bouton vehicle for their use.

In the face of this pro-motor insanity the count kept the road demonstrating going and Bouton kept his gray matter on the alert so that in the early months of 1885 a most pretentious rond cart was brought out which merited the name of car because of its passenger accommodation and the employment of a regular fireman to care for the fire and control the steam. It was a reversion of the first model in that the big wheels were placed at the rear and used for driving and the small wheels in front employed for steering. Instead of rope drive side chains were employed and steering was through a slanting column with a hand wheel. Instead of the wire wheels of the pioneer were heavy wood styles with flat iron tires. Over the back axle sat the vertical boiler or generator, fired from the rear by a special fireman who sat on a rearward extension of the mainframe with all of the boiler control parts grouped conveniently in front of him.

About this time the dog cart model was presented which carried its boiler over the front axle within a horseshoe-shaped water tank. The boiler differed radically from its predecessors in that it was centrally stoked, the front wheels were the drivers and drive was to a countershaft and thence by side chains. It appears the engine was below the frame, the stoker or fireman was dispensed with and the driver filled the dual rôle of driver and stoker.

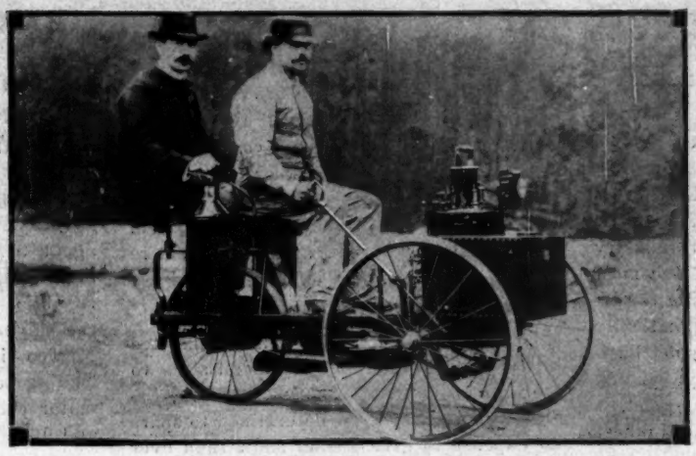
The following year, 1886, the attention of both de Dion and Bouton was turned to the tricycle—three-wheelers rather than four-wheel machines. This was due largely to the prominence of bicycles at that time; both of the men seeing in the steam propulsion of the bicycle a large possible selling field.

It was in 1887 that the first attempt was made to popularize mechanically-propelled road vehicles, as they were called, by a speed test, the honor of organizing which fell to one Fossier, a journalist in the employ of Le Velocipede Illustre, who had organized for several seasons bicycle and tricycle races on St. James dock at Neuilly-sur-Seine. This year a special event was slated for steam vehicles. The only car to make an appearance was the de Dion-Bouton three-wheeler driven by Bouton, which twice covered a course of 1½ mile in length and afterward made the trip to Versailles and back to Paris. It was on this occasion that Bouton gave the people the first sensation of fast traveling. The road followed the sinuous Seine and was closed off at one end by a railing. Bouton approached this barrier at a phenomenal speed—for those days—and as he neared the barrier the spectators marveled that he did not reduce his pace. Soon their wonder grew into fear; a cry of horror arose as the three-wheeler approached the railing; but just then M. Bouton slowed down and stopped dead still, a yard or more in front of the barricade. The fears of the multitude were changed into applause and cheers. On this trip an engineer timed the three-wheeler for a distance at which it showed 43 miles an hour.

1893, Trailer That Attained Popularity

This was the first speed test, but 1888 was to be honored with the first motor car race ever conducted. The indomitable Fossier was the organizer and the road along the Seine was the jousting ground. In this event the de Dion-Bouton had a competitor in a big Serpollet that the late Leon Serpollet had perfected earlier in the season. Two de Dion-Boutons were on hand, the victorious three-wheeler of 1887 and a four-wheeler piloted by the count. The little tricycle got the better of its four-wheeled brother at the start and both far outdistanced the big Serpollet in the out run, at which point

Bouton was leading. On the home journey de Dion, in the four-wheeler, forged to the front, the tricycle was a close second and the Serpollet well to the rear. The winner made the 20 kilometers in 30 minutes, a 25-mile-an-hour pace. So was run the Adam of the present grand prix, the Vanderbilt cup, the Ardennes circuit, the Florio cup; and here were planted those ill-fated seeds of racing so early doomed to produce that disastrous Paris-Madrid event.



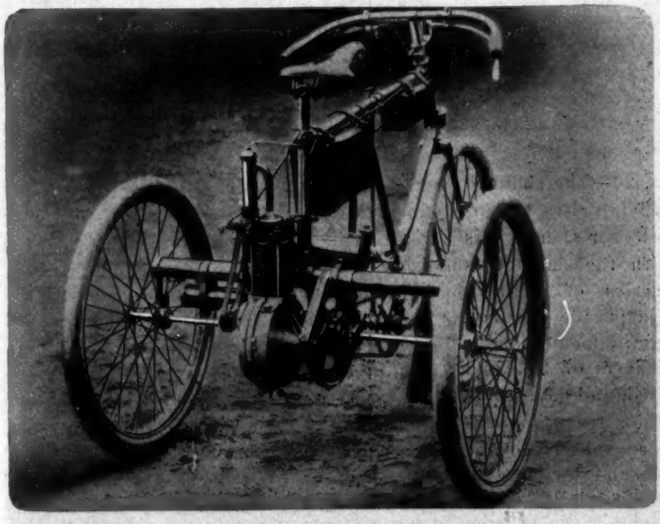
1886, DE DION-BOUTON STEAM TRICYCLE

For 4 years following 1888 to 1892 de Dion and Bouton appear to have been spent largely in experimental work. During these years no new models appeared, although activity was rife in the little factory. In 1892 what might be justly termed a rear-entrance tonneau car was presented to the public, in which the boiler within its horseshoe water tank made a bonnet effect not unlike that of the present Stanley steamer. The motor or engine was to the rear and in use was the now famous rear axle with the universal joints in the driveshafts and the vehicle weight carried on a dropped stationary member. Steering was by pillar with opposed levers—early Autocar style—and the tonneau was an abbreviated stagecoach or bus effect. A year later this style gave way to a novelty, one for which bright prospects were entertained but which proved to be "seed sown by the wayside." It was a tractor; in brief, a four-wheeler with the body and rear wheels of a horse-drawn victoria coupled in rear—the herald of the present-day six-wheeler. This type jumped into prominence in the Paris-Rouen race of 1894. Improvised as it may appear today, it was a leader then; and hauled its load, showing great superiority over the gasoline cars.

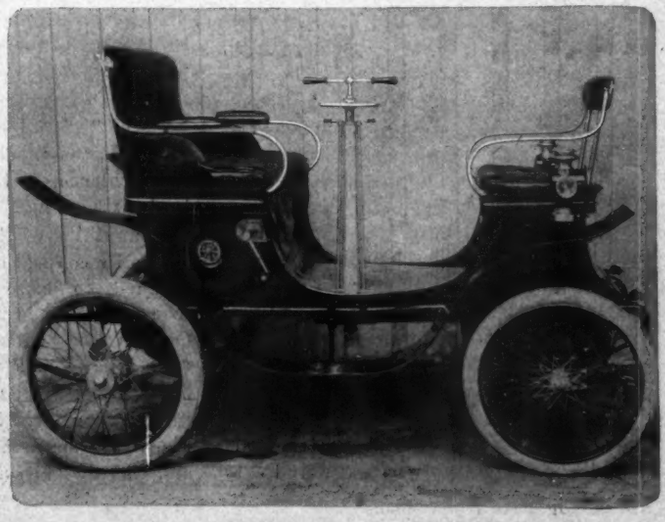
But the superiority of steam over gasoline was nearing the turn in the road. Coming events already were casting their shadows over de Dion and Bouton and in the following year the Paris-Bordeaux-Paris race proved conclusively that the supremacy of steam was threatened. It had held the public eye for 15 years as monarch absolute, but its star was waning. Too great cost of upkeep, the necessity of two men—one driver and one stoker; the loss of time steaming up; the further loss of time as lay-offs to have the boiler cleaned, and the ruinous high cost of repairs were steam nightmares that turned the attention of both members of the firm to the gasoline motor or the essence engine as they designated it. Steam buses were operating over rural routes in France and Spain, steam was on every lip, yet in spite of all Count de Dion read the handwriting on the wall and decided to drop steam and devote his exclusive energies to the gasoline motor. This was in 1895. Such was the starting of the now famous business; this marked the inception of the de Dion or de Dion-Bouton motor, which has been copied so widely and so successfully. To throw away the results of almost 20 years, to discard them without a cent of recompense, to begin all anew, to start deciphering the inconsistencies of the hydro-carbon motor after having conquered steam was like burning all bridges.

The first experiments were with small motors for bicycles, the bicycle having reached its zenith at this time. Simultaneously with this came the removal of the factory to Puteaux and also the organization of the Automobile Club of France, both important factors in making the success of the enterprise. The starting of the club boomed racing, which advanced the industry by leaps and bounds.

For a time the gasoline tricycle was slow in catching public favor but by landing third place in the Paris-Marseilles-Paris road race its popularity was assured and the ¾-horsepower motor was considered one of the wonders of the age. It really was, as proved afterwards, the foundation stone of the company's success. The fame of the tricycle grew apace but rivalry killed it. Too enthusiastic makers doubled and redoubled the motor power, until the innocent little speedsters became road locomotives, safe only in the hands of the expert racers. The average citizen grew distrustful of it. Count de Dion, early perceiving this, decided upon the manufacture of the four-wheeled car and the closing months of the nineteenth century saw the Puteaux factory busy on the production of the little voiturette whose fame has lived until this day and many of which can still be seen operating in rural France. The first of these voiturettes, the 1900 model, was a 3½-horsepower machine, which in 1901 was raised to 4½-horsepower and embellished with an improved body. Its most important feature was the connecting the one-cylinder motor direct to the rear axle, which was coupled with the use of facing seats, one over the rear axle facing forward and another over the front axle facing backward. Voiturettes or small carriages were continued until 1905, when a four-cylinder car was built of 20 horsepower. This was adapted to pleasure and commercial fields.



1895, FIRST GASOLINE DE DION-BOUTON TRICYCLE



1900, THE FIRST VOITURETTE OF DE DION-BOUTON'S

ON THE SHOW CIRCUIT

Hartford Exhibition a Success—Prospects Are Good at Pittsburg and Cleveland

Hartford, Conn., Jan. 18—Hartford's 4-day show is over, and it marked a new era in the history of the motor industry in this city. It came at one of the most propitious of times and will give the industry a lasting stimulus. Practically every dealer in the show did a good business and the prospects are most promising. As an instance that business was good, it is pointed out that one of the highest priced cars in the show was one of the first to be sold. Thursday was society day and Thursday night was club night. Practically all the members of the Automobile Club of Hartford attended the show. Chairman Dart called the gathering to order, and the mayor of the town was introduced. He scored a hit immediately by putting in a few good strong arguments for the motor car as a factor of industrial and municipal development and likewise made it clear that he was for good roads, and more of them, expressing the belief that the motor car would eventually bring about roads equal to those of Europe. Winthrop E. Scarritt was introduced by Mr. Dart, who remarked that if Mr. Scarritt had stuck to his first love, the motor car, he would not have had to hobble with a cane in consequence of his desire to sail through space. Lieutenant Governor Lake had little to say, but that little was in a humorous vein. The banquet at the Garde proved a lively affair and A. G. Batchelder, former secretary of the A. A. A., complimented the state on its good roads. Mr. Scarritt made a stirring address. Among those present during the evening was F. H. Elliott, secretary of the A. A. A. Practically all the dealers in Hartford were present at the banquet, as well as prominent members of the city government and members from out-of-town clubs.

Pittsburg's Outlook Bright

Pittsburg, Pa., Jan. 19—The prospects for a good show in Greater Pittsburg April 4-11 are brightening every day. The show committee, composed of W. H. La Fountaine, Earl Kiser, W. N. Murray and Thomas I. Cochran, is hard at work on the details and already has decided to make the show much larger and far-reaching than the first Pittsburg show, which was pulled off last spring. The committee will spend a large amount of money for scenic mural decorations of a high order, and will insist on absolute uniformity in signs, inscriptions, etc. The colors of the show will be red and white, with a touch of gold to add to the effect of the brilliantly lighted Duquesne garden. The stage of the garden will be considerably enlarged and cars will be shown there. The two tiers of boxes also will be boarded over to provide more show space. In this way sixty-six additional booths have been secured. The accessory stands will be ranged on the main flooring 6 feet above the center exhibition space. The stands will overlook the center display and rails or counters will be installed in front, back or side of the space as desired. A uniform height of 3 feet and width of 2 feet will be observed. A promenade will run around the entire circuit of the elevated exhibit.

To Be Like the Garden

Cleveland, O., Jan. 18—The committee in charge of the annual Cleveland show to be held at Central armory the week, beginning February 17, is determined to spare no expense to give a finer show than ever before. Heretofore the work of decorating the big armory has been in the hands of local people, but this year the committee has gone to Gotham and has engaged the services of M. A. Singer, of New York, who had charge of the decorations at the late New York show. It is announced that practically the same color scheme as was used at the last Madison Square garden show will prevail. All signs will be uniform both in size, color and design. The letters in the signs will be of papier mache with raised borders, making them visible all over the hall. Last year there was not enough space to accommodate every one. This year the floor space has been increased by more than 4,000 feet, by the securing of the ballroom on the second floor of the armory. But in spite of this increase of room there will be a shortage of space against this year.

Parade the Main Feature

New York, Jan. 19—Active work is being done by the various committees of the New York Automobile Trade Association having in charge the promotion of the carnival and opening early in April in this city. The parade, which will be the main feature of the carnival, will move in four divisions. The first will consist of cars built in or before 1903; the second of electric, gasoline and steam vehicles owned by dealers; the third of decorated cars, and the fourth of commercial vehicles. Richard Newton, Stoddard Dayton; Frank Eveland, Stevens-Duryea, and C. P. Skinner, Mitchell, have been appointed a committee to look after the finances of the affair.

Rhode Islanders Plan Show

Providence, R. I., Jan. 20—The show to be held here next month promises to surpass anything of the sort ever seen in this city. In connection with the show it is planned to have a series of military events. There is to be a parade one day. Other events will be guard mounts, military night, when the officers of this and other states will be invited, and governor's night, when there is to be a reception. Already the space has been subscribed for and there will be a number of Boston concerns represented which is expected to enhance the success of the affair.

MEXICO AS A MARKET

Government Agent Reports On Motor Business There—Chance for American Makers

Washington, D. C., Jan. 18—The federal government recently sent a special trade agent to Mexico to gather facts and figures regarding American trade with that republic. He has just made a report on the subject. Among other things he says Mexico is rapidly advancing toward a leading position as a market for American motor cars. During the fiscal years 1906 and 1907 the republic furnished the third largest market for American cars, being exceeded in importations only by the United Kingdom and Canada. The imports from the United States of motor cars and parts into Mexico for the fiscal years 1905-1907 show large increases, and were $119,986, $422,626 and $812,639, respectively. One reason for the growing popularity of the motor car is the number of new roads which have been constructed and are under construction. This applies not only to roads around Mexico City, but to some extent to the northern and western portions of the republic as well, where the movement is spreading.

The makers of high-grade cars have naturally found their best customers among the wealthy classes in Mexico City. The high-class American car has a good reputation in Mexico for all-around work, and the sales of the same are constantly on the increase. Prices range from $2,000 to $20,000 Mexican, with a large demand for the medium-priced car. Touring cars priced at $8,000 Mexican money have sold well, but a machine of this sort which could be sold at $6,000 Mexican would certainly prove popular and doubtless find a ready market. The Mexican dollar is equal to about one-half the American dollar. The motor car trade is about evenly divided between the touring and closed-body car. Dealers state a demand is being created for American cars of the runabout type of from 10 horsepower upward.

While the low-hung, luxurious European-made cars enjoy a peculiar preference, the growing demand is for cars built on American lines, and the suggestion is made that in order to foster and maintain this sentiment it would be well for American makers to devote more minute attention to the fineness of the coach work, not only that it be substantial, but luxurious, both in exterior finish and upholstery. A dealer in cars of French, Italian, German and American make states that while the European car undoubtedly excels the American in coach finish, the American is not surpassed in mechanism by European competitors. It may be said that the Mexican purchaser, especially the native, desires a car of more or less showy appearance. Light fancy colors of coach finish and upholstery are well liked. Club drab

and onyx bronze are especially favored. There are about 650 licensed motor cars in Mexico City. This is regarded as a fine neucleus and every indication points to a steady growth in the demand for motor cars in the Mexican metropolis. The well-to-do people there readily recognize the worth of the motor and the fact so many representatives of American cars are headed for Mexico shows makers in this country have sized up the situation and are not losing the chance to gain an early footing in that republic.

WARDROP MADE MANAGER

Chicago, Jan. 18—At a meeting of the board of managers of the Commercial Vehicle Manufacturers' Association Walter Wardrop, publisher of the Power Wagon, was appointed manager of the newly-formed organization. The permanent officers of the association are as follows: President, G. M. Weeks, Weeks Commercial Vehicle Co., Chicago; vice-president, Oscar Lear, Oscar Lear Automobile Co., Springfield, O.; treasurer, H. F. Hamilton, Rapid Motor Vehicle Co., Anderson, Ind. The association, which will have its headquarters in Chicago, will in the future conduct all national shows as well as public demonstrations of industrial motor vehicles. Its affairs are controlled by a board of managers consisting of the following: H. G. Hamilton, Rapid Motor Vehicle Co., Pontiac, Mich.; Oscar Lear, Oscar Lear Automobile Co., Springfield, O.; J. E. Burke, Lambert Motor Truck Co., Anderson, Ind.; G. M. Weeks, Weeks Commercial Vehicle Co., Chicago, Ill.; H. C. Eddy, American Motor Truck Co., Lockport, N. Y.; G. V. Rogers, Mitchell Motor Car Co., Racine, Wis.; Hayden Eames, Studebaker Automobile Co.

TRIPLE LINE FOR P. & S.

New York, Jan. 20—The Palmer & Singer Mfg. Co., which under its present and former title has hitherto been very conspicuous in the sale and exploitation of Matheson cars, having recently arrived at the parting of the ways with the builders of the Matheson, has completed negotiations pending for several weeks and makes an important announcement of its future plans for the employment of its big garage in Broadway between Forty-ninth and Fiftieth streets, now nearly ready for occupancy. First and foremost, the company has arranged to bring out a line of new cars to be known as P & S. There will be three models—a 40-45-horsepower four-cylinder touring car, a town car with all the standard closed bodies, and a six-cylinder 60-horsepower racing runabout, all equipped with Bosch magnetos. The company has also taken on the selling agency of the Simplex, now handled by the Simplex Distributing Co. C. M. Hamilton, manager of the latter, will join the P & S outfit and will also bring with him to the new garage the Isotta Fraschini, an Italian importation, making a triple line.

THREE RACES ON ROAD

Georgians Broaden Out and Will Have 2 Days' Sport on Highways at Savannah in March

New York, Jan. 22—Special telegram—Advance proofs of the entry blanks for the Savannah meet on March 18 and 19 are ready. They include the rules of stock car competition as published in Motor Age last week. There has been some rearrangement of the rules and minor amendments to them. An important change subsequently decided upon by the committee was the elimination of the rule restricting the drivers to American citizens and very wisely throwing open the pilotage of the competing cars in the three races to the world.

The committee has definitely settled upon the program. It will be made up of three races. The star feature of the card will be a race of 360 miles, made up of twenty laps of an 18-mile course, in which contesting cars will be limited to a maximum cylinder displacement of 575 cubic inches. The prize in this event will be a challenge silver cup valued between $1,500 and $2,000 given by the citizens of Savannah. The other two races will be at 150 miles each, made up of fifteen laps of a 10-mile course. One will be for cars with a maximum cylinder displacement of 375 cubic inches and the other for six-cylinder cars over 575 cubic inches. Fifteen entries are required in the big race, ten for the small-car and five for the six-cylinder car contest.

Before the entry blanks were out two nominations were made by wire. The first, which is of an Apperson Jackrabbit, was given No. 1; and the second, a Premier, entered by H. O. Smith, was allotted No. 2. Reports from Savannah tell of the great enthusiasm for the coming tournament in Savannah and Georgia and in fact throughout that section of the south. Steamship, railroad and freight companies are heartily co-operating with the Georgians and have presented schedules of rates for passengers and cars so low as to make participation in the races and visiting the tournament economically possible to all. The widths of the course as given by W. F. Brown, its engineer, are as follows: Wylly avenue, 18 feet; Montgomery road, 15 feet; Moore avenue, 15 feet; Isle of Hope bluff, 15 feet; La Roche avenue, 15 feet; Dale avenue, 24 feet; Levy avenue, 15 feet; Bonaventure avenue, 15 feet, and stand on the course.

A committee of citizens has been formed to co-operate with the Savannah Automobile Club in perfecting arrangements for the meet and in carrying forward the work of preparing the roads, building up the turns at various corners, and banding and oiling them, and erecting the grand stand. More than $5,000 has been subscribed by the citizens of Savannah and arrangements have been made for 1,200 troops of the state militia to guard the course. The entry fee for the Savannah cup race has been set at $500, with $250 for each additional car, and $150 for each of the shorter races with $100 for added entries. The big race will be run on the second day.

Entry blanks for the meet may be obtained from F. H. Elliott, secretary A. A. A., 437 Fifth avenue, New York, and from Arthur W. Solomon, secretary Savannah Automobile Club, Savannah, Ga.

WESTCHESTER'S BIG FIELD

New York, Jan. 21—Secretary Moore of the committee in charge of the Westchester stock car race, called at Motor Age office today and set forth explicitly the situation as regards the entries that have so far been made and promised. Moore says twenty-one entries have been actually made, and that entry fees have been paid by all but three of them. He gives the list of them and their probable drivers as follows: Isotta Fraschini, John Tyson; Isotta Fraschini, Al Poole; Isotta Fraschini, not named; Hol-Tan, Harry Fosdick; Stearns, F. W. Leland; Stearns, Guy Vaughan; Stearns, Barney Oldfield; Lozier, H. Michener; Lozier, R. Mulford; Studebaker, not named; Studebaker, not named; Simplex, Joe Tracy; Benz, R. Bergdoll; Garford, W. H. Hurlbert; Allen-Kingston, A. L. Campbell; Panhard, George Robertson; Renault, M. Bernin; Fiat, E. Cedrino; Fiat, not named; Stoddard-Dayton, not named. "In addition to the above," says Moore, "there is another car, the name of which I cannot recall, and we are positively assured of the nomination of another Renault, another Panhard, an Apperson and a Maja. Besides these fifteen other makes are represented by letters of inquiry, and partial assurances as follows: Matheson, Belden, Pope, Dragon, Fiat, Simplex, Olds, Welch, Bianchi, Premier, C. G. V., de Dietrich, Maxwell, Locomobile and Itala." The grand stand will be at Briarcliff.

TEN IN NEW YORK-PARIS TEST

New York, Jan. 21—Representatives of American cars entered in the New York-Paris run meet in this city Thursday to discuss the event. At present there are ten cars entered, four of them American. In addition there are four other European and two American makers considering the proposition. France has entered a de Dion, Motobloc and Sizaire-Naudin; Italy an Itala and a Zust; Germany a Porthos and America a Thomas, Maxwell, Hol-Tan and White. A 5-day schedule has been laid out between New York and Chicago, with nightly stops at Albany, Rochester, Cleveland and Waterloo, Ind. No car will be permitted to start west from Chicago before February 20, all the contestants keeping together until that city is reached, after which it will be a free-for-all, with Paris as the ultimate goal.

The Western News Company of Chicago and Its Branches Supply Newsdealers
N.H.Van Sicklen, Manager

MOTOR AGE

Subscription Two Dollars a Year. Foreign and Canadian Subscription four Dollars
Charles P. Root, Editor

1200 Michigan Avenue, Chicago
Published Every Thursday by the Trade Press Company
Entered at the Chicago Postoffice as Second-Class Matter
New York Office 29 West Forty Second Street

AMERICAN CARS ON THE BRITISH MARKET

GREAT BRITAIN has been unnecessarily stirred up over the prospect of having to deal with American competition—not along legitimate lines, but from the standpoint of surplus. It has been heralded all over the British Isles that American makers have immense stocks of unsold cars on hand which cannot be disposed of because of the American practice of producing new models each year and that these cars are to be unloaded upon the British public at prices that cannot help sell them, no matter what their real value or whence their manufacture. As Motor Age has said, it is not unreasonable to suppose that there will be some surplus stocks of motor cars in this country, just as there are surplus stocks of other commodities; but so long as present conditions exist and so long as the American market is far from being supplied, there can be little possibility that Great Britain will be overburdened with any surplus stock of American-made cars, which, by the way, does not exist to any great extent. Before American-made cars have to go abroad in order to realize money for their makers, the foreign-made car will be driven out of this country to the last dot and there will exist a motor car famine here—that is the logical solution of the whole situation so far as pertains to any great quantity of cars.

Besides this, there are countries in South America, in the orient and in other parts of the world that need cars and would it not be folly on the part of the American makers to sacrifice even its surplus stock to Great Britain before the countries that are clamoring for cars had been supplied. Happily all do not take the matter as seriously as do some—who perhaps have received a trade chill and have become unnecessarily frightened over some wild newspaper reports. It must be admitted even by Englishmen—and it is admitted—that the American-made car has already been established as a factor in the motor car trade in Great Britain and along absolutely legitimate lines. It is also admitted that this American business will always be a factor, but it is pointed out that it will be a case of the survival of the fittest, just as it is in any business where competition plays an important part.

A most sensible view of the situation has been taken by the trade press of England, as an expression from Motor tends to show: "Undoubtedly a few standard makes will profit by the curiosity aroused in the matter and bring their product into greater prominence, but this cannot be called dumping in any sense of the word. Their prices will remain the same or, as in one case, show a positive increase. Their sales will depend legitimately upon the satisfaction they give to their owners, and we English are the last in the world to decry a success brought about by fair competition in a market avowedly open to the world. The few firms that have obtained a footing here for American cars have hitherto conducted their business on rational lines, and, it should be remembered, have studied the English market with care and assiduity. Their stock held here for sale does not represent a mere surplus left over after the home demand, but is an integral part of their output, and is considered numerically with an exact regard to the prospective needs of English purchasers. Circumstances are undoubtedly abnormal this year, and the severity of the slump in American affairs—the automobile industry included—is a fact entirely beyond dispute; but such companies as are outlined above will not be the concerns chiefly affected. It is now a matter of several months since the pinch was first felt on the other side, and whether the public is aware of it or not, the fact remains that retrenchment began early and shows no sign of being remitted now or for some time to come. In a word, the American manufacturer has laid his plans with a caution for which many will scarcely give him credit, and has curtailed his output here and canceled his orders there in a manner which indicates his view of the outlook very accurately."

It cannot be denied that in the few days of 1908 that have come and gone the trade situation in the motor car line—and in all other lines, as well—has greatly improved. It is not back to a normal condition by any means, but it has improved to such an extent that those who are watching the situation—those who ought to know and who do know—do not hesitate to say the outlook is more promising for 1908 than they had believed possible as long ago as October, when the financial flurry began. Selling has been such, even in mid-winter, as to demonstrate that the spring months will see the motor car business in somewhere near a normal condition so far as pertains to the retail end. It is true the makers have cut down their anticipated outputs, that they have canceled orders for parts and stock, and it was most fortunate that the financial troubles came at a time when this curtailment could be made gracefully. But the fact remains, nevertheless, that many of the factories that had laid off large gangs of men are now putting them to work and some are even working practically full force. It is not intended to convey the impression that the output for 1908 will be all that was anticipated in the early fall months, but it will not be surprising if the demand for 1908 cars exceeds the supply as now figured.

The American maker will have no surplus of 1908 cars to dump on the British market—he will make only as many cars as he feels reasonably sure of selling—and not at cut prices, either. There are no indications that there was any great surplus stock of 1907 cars, so whence came the cars that are to be dumped on the British market? American-made motor cars do not suffer such radical alterations from year to year as they once did; in fact, there is, in most cases, little difference between the 1907 and 1908 cars—so little difference that with very slight alterations any small 1907 surplus stock could be made into 1908 stock and then would not have to be dumped in the British market in order to be disposed of for a cash consideration. Even providing no changes were made, these cars—if they exist—could find quite as ready a market in this country as by going several thousand miles for the purpose.

The season of 1907 was too near at an end when the slump came to permit any great amount of stock of cars being carried over, and this one fact precludes the remotest possibility of there being a sufficient number of cars dumped on any market to have any serious effect one way or another. Besides, this country could sell any surplus to its neighbors on the border and represent them as 1908 cars if it wished to do so—and it would be doing nothing more than some foreign concerns have been doing for several years. But there is no reason to resort to such methods—first, because any surplus can be disposed of at a profit without going outside the country and second because there is no surplus stock that could have any material effect on any market so long as up to the present time no market has been fully supplied.

CERTAIN motor clubs in certain parts of the country deserve more commendation from the motoring fraternity than they appear to be receiving, considering the character of the work they have undertaken and in many instances are carrying out—not for their own good, but for the good of all motorists. For instance, the Cleveland club has set out to procure good roads and its members are bending every effort to accomplish this work; the Buffalo club has done much and has only recently secured a decision from the courts that means much to all motorists; the Quaker City club is another road worker; the Chicago Motor Club has promoted a number of contests, realized a good profit therefrom and is spending these profits in putting up guide boards on all roads within a radius of a hundred miles of its home. Other clubs have done similar work; still others have existed simply from selfish motives and with no thought of others.

ANY motorist who is a non-resident of New Jersey and who submits to the demands of that state concerning motoring regulations does not deserve to share in those liberties which motoring organizations all over the country are procuring. New Jersey abounds in good roads, picturesque spots and decent hostelries—and with all this it does not deserve the support of a single traveler from without its borders. According to the report of the legislative board of the American Automobile Association the New Jersey provisions in a word are: "That a non-resident automobilist engaged in interstate travel shall not be allowed to cross a border of the state of New Jersey until he has made a trip to Trenton, paid his tribute to the state, with the emphasis on the tribute, and procured his license to exercise his natural common-law right to use the highways; and that no automobilist may traverse the streets or roads of this sovereign state of New Jersey until he has subjected himself to the humiliation of appointing as his attorney in fact a man whom he does not want to represent him, and whom he perhaps never heard of." In the language of Chairman Terry, "the law is an outrageous one and unworthy of any self-respecting commonwealth." There is as much reason to hold up a Pennsylvania train and demand that each Chicagoan going to New York, through New Jersey, should pay a license fee for the privilege as there is for taxing non-resident motorists who wish to travel a few miles over the state's roads. All of which suggests that here is a violation of the federal constitution which should be brought to the attention of the supreme court of the United States.

CHAUFFEURS' organizations, whether they be known as clubs or unions or by some other title, could be made to play an important and successful part in motoring. Such organizations as a rule begin with excellent intentions, but, like clubs whose members lose interest therein, are apt to degenerate in the matter of purpose for the sake of realizing money. They are apt to seek members for the sake of the fees and when they have degenerated to this point their usefulness comes to an end. It were better a dozen decent, live and conscientious members paying a few dollars a year than a horde paying thousands and having no real purpose in view other than self-entertainment of some sort. When a chauffeurs' organization shall have proved its existence for the benefit of motoring by elevating its members it will have been entitled to the plaudits of the entire world, motoring and general.

JUST NOW that New York-Paris race, which is to start February 15, is not creating much of a furore, but if there are four or five starters, and they hold out past the Mississippi river, they will furnish excitement enough before they get through to satisfy even a yellow press. It must be known that the present mildness of weather will not last forever.

CONTESTS on the road are of a negligible quality, according to some authorities, self-styled or otherwise. It is true they have their good points and their bad points; they show some things that ought to be shown and they show some things that some people would rather not have shown. Whatever they show or do not show so far as some more directly interested are concerned, it cannot be denied that they show the rottenness of some American roads and ought to be encouraged and supported by the trade and motorists in general from this single point of view if from no other. Certainly no better means of bringing the attention of the world to the miserable state of America's roads could be found than in the reports of such contests appearing in the public press from time to time.

WHEN Mexico, Canada and some of the South American states are ready purchasers of motor cars, why should there be any material falling off in the demand for these goods? If the American maker does not deem it wise to seek a market in England and on the continent because fearful of too severe competition—that does not exclude him from building up a trade with his cousins on his own hemisphere. There is ample prosperity in the countries named and reports indicate a good demand for motor cars. This demand might easily be increased were a strong campaign of motoring education inaugurated.

The Week in Brief

Entry blanks issued for Savannah meet show Georgians' plan to run three road races instead of one; two entries already made—Apperson and Premier.

Twenty-one entries for stock chassis race in Westchester county, New York, are in hand and promoters believe limit of thirty will be reached.

American contestants in New York-Paris test to meet this week; ten entries already in hand—six from Europe and four from United States.

Pennsylvania motorists and farmers join forces and begin crusade for improvement of highways around Philadelphia.

Commercial vehicle manufacturers complete their national organization and elect Walter Wardrop general manager.

United States agent, reporting on outlook in Mexico, declares there is good field there for American motor cars.

Chicagoans starting extensive signboard crusade with intention of permanently marking all roads around city.

Hartford's show declared a success; Cleveland and Pittsburg report progress on their exhibitions.

Interesting story of motor-building efforts of de Dion and Bouton from 1880 to the present.

Coming Motor Events

Italian Show—Exhibition in Turin, Italy, January 18-February 2.

Detroit's Armory Show—Seventh annual show of Tri-State Automobile and Sporting Goods Association in Light Guard armory, February 10 to 15, inclusive.

Ormond Meet—Under auspices of Automobile Club of America, March 2-9.

Boston Show—Annual Boston show, from March 7 to 14, in Mechanics hall. Chester I. Campbell, manager.

Buffalo Show—Sixth annual show of Automobile Club of Buffalo, from March 9 to 14. Dal H. Lewis, 760 Main street, Buffalo, manager.

Savannah Races—Stock chassis road events under auspices of Savannah Automobile Club, March 18-19.

Pittsburg Show—Automobile Dealers' Association of Pittsburg show in Duquesne garden, April 4-11.

Westchester Race—Stock chassis race in Westchester county, N. Y., April 24.

New York-Paris Test—Start of Le Matin's New York-Paris trial, New York city, February 15.

Twelve-Hundred-Mile Run—Chicago Motor Club's 1,200-mile, 300 miles a day, reliability test, June 24, 25, 26, 27.

GENERAL CAMPAIGN FOR ROADS AND SIGNS

Chicago Motor Club Will Begin Its Task of Putting Up Guide Posts at Once—Pennsylvania Aroused Over Highways

CHICAGO, Jan. 21—At least thirty motorists will be actively engaged all summer in marking in a permanent manner the principal routes running into Chicago, a work that has been thoroughly organized by the Chicago Motor Club and which its signboard committee has lost no time in tackling. Realizing the importance of this mission, Chairman Lawrence and his colleagues intend to do the work in a systematic manner, laying out the task carefully and ascertaining exactly how many posts will be required for each route and other necessary details. When all the courses have been gone over and the various distances recorded, the posts will be ordered and before mid-summer it is thought a big part of the work will have been accomplished. The start will be made next Sunday, when an expedition will go to South Bend and back. This course already has been marked in a half-hearted manner, but the committee proposes to do it over and make it conform with the others. The full committee will go along in order to see how the work is done. The following Sunday the scouts go to Lake Geneva over the newly graveled road leading to that famous summer resort. It is believed that if this course is marked in an intelligent manner that some of the millionaires who pass their summers at the lake will become interested enough to assist the movement in a financial manner. These signs will be 20 by 6 inches, made of iron and with 2½-inch letters marking the directions. There will be double and triple plates in order that all necessary information may be placed on the post. In addition to the giving of the mileage and the next town, there will be danger and caution signs on the tag as well, while the tourists will be warned of the proximity of railroad crossings. It has not been definitely decided just what material will be used for posts. Cedar is favored, while some think a creosoted post would be best. That, however, is a matter that will be threshed out at a meeting of the committee tomorrow night. A post that will last for 30 years is desired.

Pennsylvania Is Aroused

Philadelphia, Pa., Jan. 20—To the entente cordiale now existing between the motorists of this city and the borough officials and farmers of the country round about may be ascribed in large measure the many road improvements which will be inaugurated with the advent of open weather. Through the efforts of the Automobile Club of Delaware County, assisted by the local clubs, the highway commissioners, road supervisors and farmers' granges have been interested in the improvement of the old Baltimore pike. Officials from every borough and township on this road have been brought in motor cars over the rough highway to the club's banquet, fed up to the limit and been compelled to listen to their hosts' plans for improving the neglected road, which, in good condition, would be an ideal short cut to the south and west. The borough magnates and the agriculturists have seen the light and are preparing to begin work this spring. The motorists are raising $1,000 to help the thing along, and the Philadelphia clubs will assist. The A. C. of P. has already sent its check for $100. Across the river in Jersey Highway Commissioner Hutchinson is preparing for the biggest good roads year in the state's history. While the bulk of the new work will be macadam, shell and gravel, the commissioner is going to experiment largely with asphalt in the hope of discovering a plan to eliminate the dust nuisance. The asphalt top dressing will not be the smooth sort, such as is seen in city streets, but small stones bound together with asphalt. This, it is believed, will solve the problem of providing a wearable top dressing which cannot be blown away by vagrant winds. The commissioner now does his inspecting work in a motor car, and the ability to swoop down on unsuspecting supervisors without warning keeps those officials keyed up to the high standard of which they are capable. A discordant note in the general song of praise for good roads was heard last week, however, when the Cumberland county board of freeholders refused by a vote of 11 to 7 to build the missing link which prevents the completion of the Camden-Cape May route. When these 13 miles of poor road are rebuilt it will give a straightway of 89 miles of as good and as level going as is to be found in the country.

Another point that should be scored by the local motorists is the good likely to result from the experience of the contestants in the New Year's run of the Quaker City Motor Club. The papers hereabouts fairly teemed with denunciations of the so-called roads between Doylestown and Ottsville and between Allentown and Kutztown. The Bucks countians are already at work on the preliminaries for seeking state assistance in an effort to improve the first-named stretch, while progressive residents of Lehigh and Berks counties, writhing under the caustic comments of the press, are agitating a complete rebuilding, with state assistance, of the 35 miles of road between Allentown and Reading in this state. Montgomery county, also this state, has been trying to purchase the Springhouse and Chestnut hill turnpike, with a view of freeing the road and doing away with toll charges. A jury of view was appointed to look the road over and assess a fair amount of damages therefor. The jury secured a fast motor car, burned up the road and named $23,870 as a reasonable amount. The county kicked, claiming the award is unjustly large and averring that nobody can justly estimate the condition and value of a road while doing a 2-minute clip.

At the meeting of the Fairmount park commissioners a resolution was introduced barring from the people's pleasure ground motor cars whose tires are equipped with chain grips. E. T. Stotesbury talked of the deleterious effects of the chains on the roads, and the matter was finally referred to the committee on superintendence and police. The committee will junket to New York and through New Jersey with a view of getting pointers on the best way to handle the subject.

Tips on Sandy Roads

Milwaukee, Wis., Jan. 20—An interesting article has been prepared by Arthur R. Hirst, highway engineer for the state of Wisconsin, in which he gives valuable suggestions on how to improve sandy roads. His article in part is: "Wisconsin has many miles of sandy roads. The wetter they are kept the better they are. They should be made either flat or lower in the center than at the sides and trees and underbrush should be allowed to grow as near the road as possible, as they help retain the moisture. For temporary improvement of sandy roads a layer of cut straw, leaves, shavings or any material that will accumulate and retain moisture and offer some resistance to the wheels is of benefit, but for a semi-permanent improvement clay should be mixed with the sand in proper proportions. In preparing the sand road for the clay give it shape so when the clay has been added it will have a crown. Having crowned the road the clay should be spread upon it to a depth of from 6 to 8 inches in the center and tapering to 2 or 3 inches on the sides. Usually 14 feet is a sufficient total width. Each load of clay as soon as it is deposited should be spread evenly before being driven over. It should then be covered with a load of clean sand from the roadside, and plowed and harrowed alternately until the lumps in the clay have been broken up. The making of a satisfactory sand clay road is a slow process and must be watched carefully for some weeks after adding the clay to see there is just the right proportion of sand and clay mixed.

The cost of sand clay roads is entirely dependent on the cost of delivering the clay. For a mile of road 14 feet wide, 6 inches deep at the center, decreasing to 3 inches at the sides, there will be required about 900 cubic yards of loose clay. The cost of spreading, shaping, harrowing and rolling would be about $150 per mile, as I estimate it in my figuring."

Wants Surplus for Roads

Washington, D. C., Jan. 19—Representative Ferris is the author of a bill introduced in congress that is of vital interest to every motorist in the country. It is a bill "to provide for a permanent, lasting and uniform system of improvement of public highways and post roads, and providing how the state and nation may act in conjunction and by mutual contribution bring about the desired end and distribute the surplus in the treasury pro rata each year among the states for that purpose." Under the terms of the bill it shall be the duty of the secretary of the treasury, by and with the approval of the secretary of agriculture, at the close of each fiscal year, to determine the amount of the surplus in the United States treasury, after making all necessary deductions for expenses, etc., said remainder to be declared a surplus and available for distribution among the states and territories. This surplus is to be distributed among the different states and territories each year, each state and territory to have not to exceed $500,000 in any one fiscal year. The money is to be expressly used for the improvement of the highways. No state or territory is to have or receive the benefits of the proposed law until it has furnished satisfactory proof that the state is willing, ready and has the ability to pay an amount equal in amount to the aid received and apportioned under the proposed law. Various provisions are made for carrying into effect the proposed law. The bill was referred to the ways and means committee.

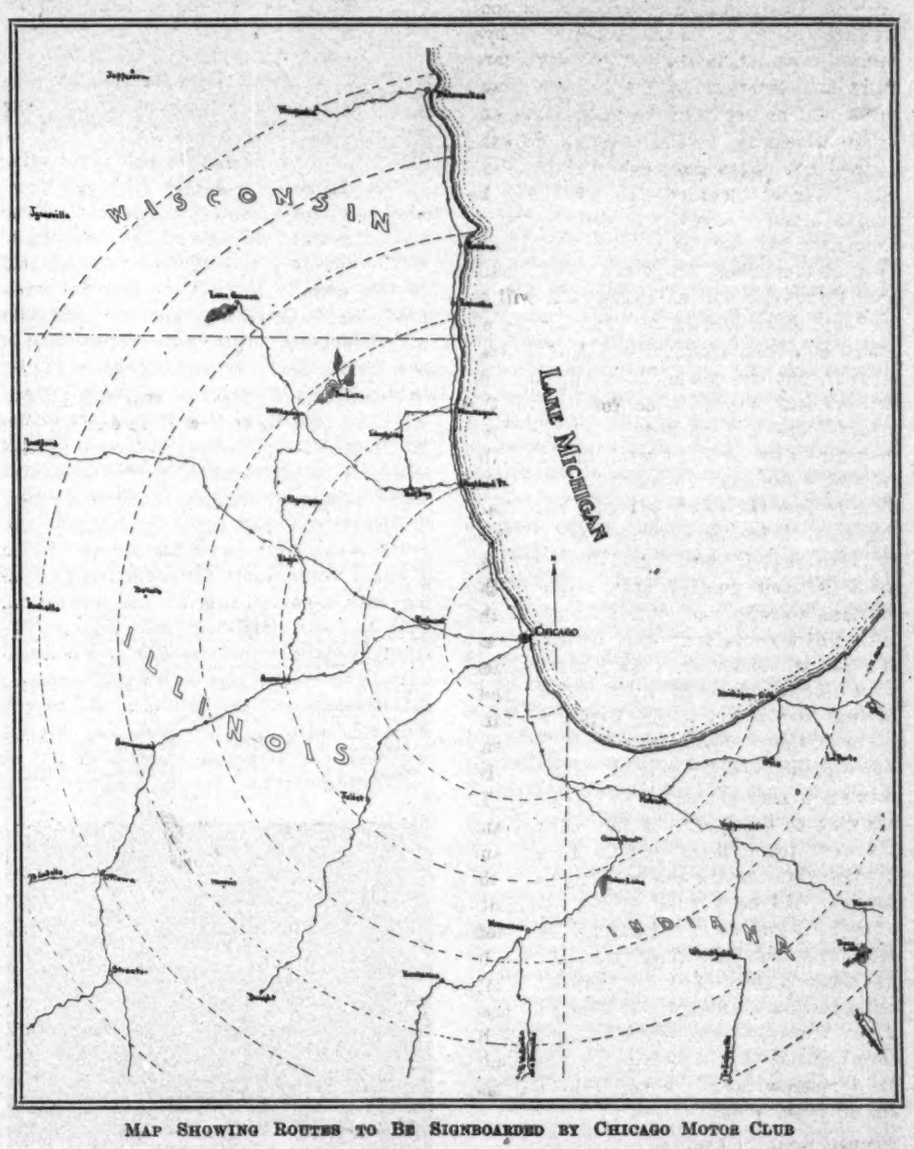
Engineers Discuss Roads

Indianapolis, Ind., Jan. 21—At the annual meeting of the Indiana Engineering Society, held in Indianapolis last week, members took occasion to lay the blame for the destruction of gravel and macadam roads on motor cars. Their action caused considerable surprise in Indiana, as it has been generally presumed that motor cars protected the roads more than do heavy farm wagons and traction engines. In the course of the discussion it was declared that the yielding surface of pneumatic tires, combined with the great weight of the motor car and the great speed at which it is operated, creates a subtle but powerful suction which loosens the gravel and smaller stones and prevents them binding. The engineers said that within a short time the gravel and macadam would have to be replaced with broken stone, treated with asphalt or coal tar. The motorists of the state, however, believe that it will not be long before the highway commissioners realize the motor car is here to stay and that if the present roads are not built to withstand this traffic care should be taken in the future to see that material that will defy the motor car is used.

Ohio After More Funds

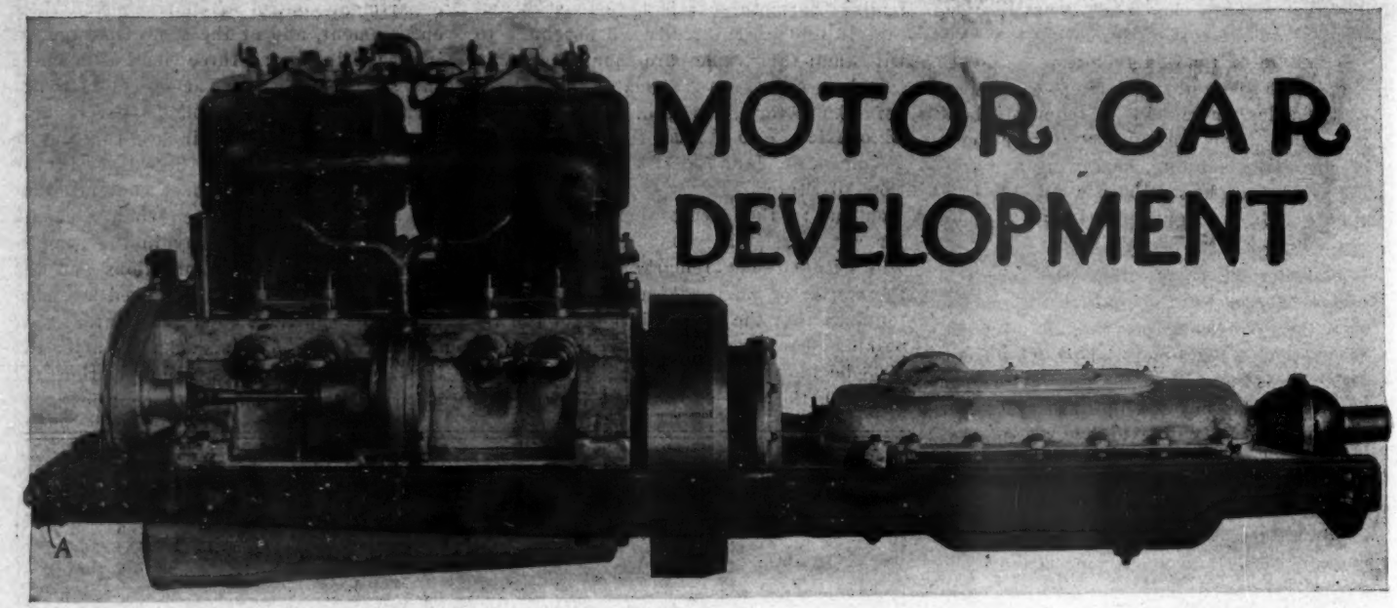
Toledo, O., Jan. 20—If the recommendations of State Highway Commissioner Sam Houston to the present legislature count for anything it is probable next summer will witness some remarkable progress in the matter of road making in Ohio. Houston asks that the appropriation for the repair and construction of new highways in 1908 be increased by the legislature from $158,000, the sum allowed the department last year, to $450,000, that the progress of this work may be advanced more rapidly and effectively than heretofore. He recommends the position of engineer of roads be created, to carry with it the employment of a competent engineering crew, that there may be increased efficiency in the planning and building of state highways. The enormous increase of appropriation required for state aid is explained as follows: The inconsistency of the state pretending to give state aid and giving the department control of contracts and their enforcement, and at the same time requiring localities to pay three times as much as the state is patent. The object is to increase the state aid from 25 per cent to 50 per cent, and thus induce contractors with full equipment to take part in the lettings. The commissioner contends that the appropriation to each county should be at least $5,000. Delay in the completion of surveys, labor conditions and the extremely wet season has slowed the completion of contracts to such an extent that several will not be finished until after the lapsing of the former appropriation for state aid. A number of counties that failed from misunderstanding of the law, from neglect and other causes, to secure apportionments now desire to avail themselves of the apportionment for 1906 and 1907. The commissioner recommends that the unused portion of this money be reapportioned to these counties, to be used in completing unfinished roads.

Commissioner Houston believes if he can get the financial assistance he is asking he can give Ohio a system of good roads which will make the state famous.



MAP SHOWING ROUTES TO BE SIGNBOARDED BY CHICAGO MOTOR CLUB

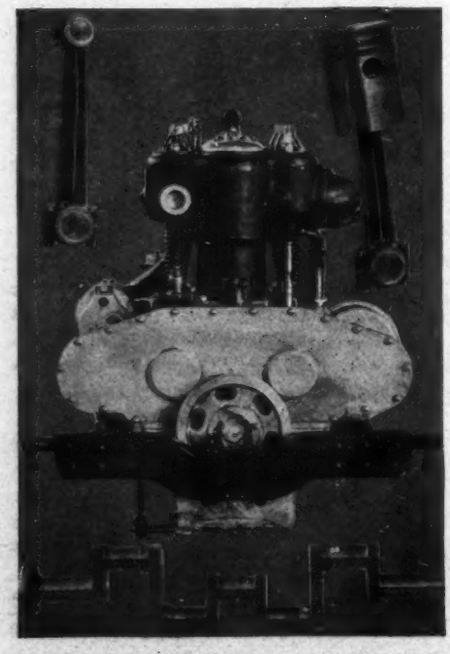
MOTOR CAR DEVELOPMENT



EXHAUST SIDE OF MARMON WATER-COOLED CAR, SHOWING BRONZE VALVE LEVER SUPPORTS IN CRANKCASE

IN BRINGING out its new 40-45-horsepower water-cooled model H car the Nordyke and Marmon Co., of Indianapolis, has done much more than several other concerns in the first year of their transition from air to water-cooling. The model H Marmon is not simply an air-cooled car altered by the substitution of water-cooled cylinders and the addition of a radiator and water-pipe system—it includes several innovations in design and shows changes in many of the original Marmon features. To begin with, the double three-point frame suspension is continued with one modification: The body is carried on a channel framework, which at its rear rests on full elliptic springs, but has its cross front member trunnioned on the subframe. The subframe carrying the motor and gearset is supported in front on the full elliptic springs, but in the rear through a trunnion support on a crosspiece of the mainframe. This last feature is the change; namely, carrying the rear of the subframe on a trunnion from a crosspiece of the mainframe instead of direct on the rear axle. On this and the following page appear illustrations of the power plant seated on the subframe showing the cylindrical ends A of the crosspiece of the subframe which rests in a trunnion on the top of the front springs. The front member is better shown in the illustration of the front end of the motor.

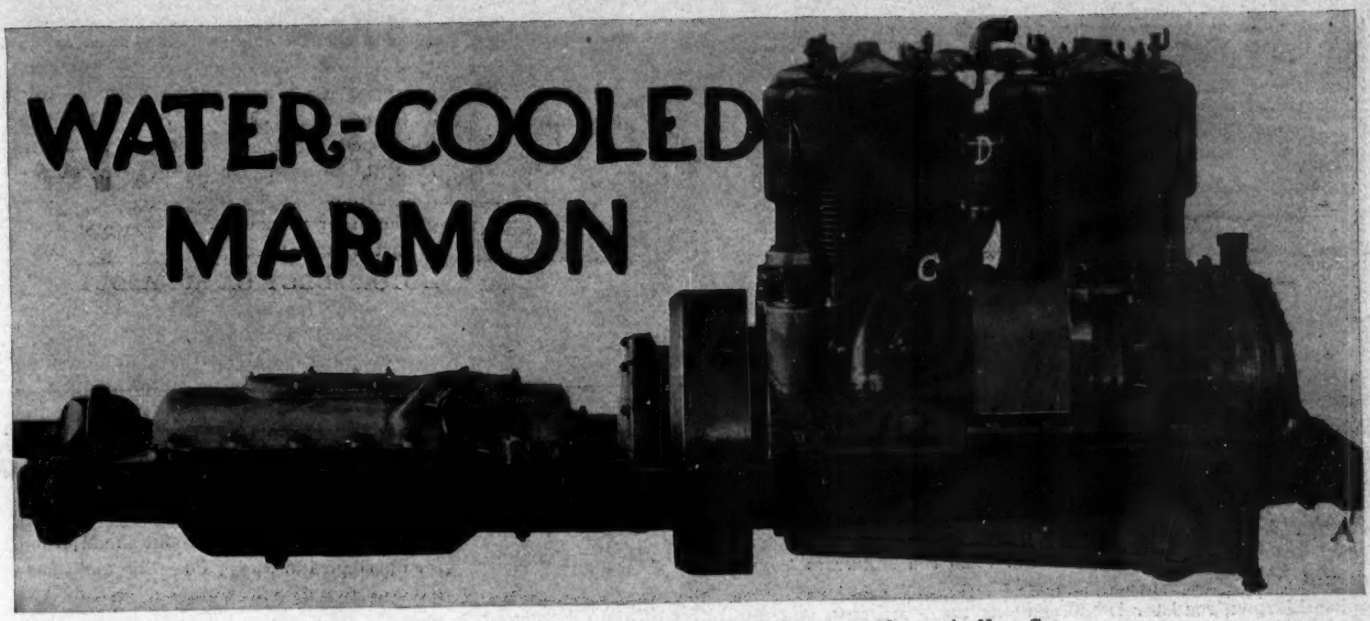
Besides this frame alteration is the discontinuance of the V motor in the water-cooled model and the adoption of a vertical type with cylinders in pairs with opposite valves. In a cursory inspection of it, attention is invited to the intake pipe C, which connects with a short T piece D between the ports of the cylinder pairs, the remainder of the intake pipe being in the form of a core contained within the castings. This form of intake was illustrated in these pages last week and will be found on a great many cars within the next 12 months. It simplifies greatly the intake side of the motor, leaves the intake valve springs and stems perfectly accessible and enhances the appearance of the motor. Yet another change is the return water piping from the large aluminum cap plates forming the covers to the waterjackets. On the rear end of the plate for the front cylinder pair is a short curved pipe, the mouth of which faces a similar pipe on the cover for the rear cylinder pair. Each has a flanged end and a T union unites them, the radiator pipe joining with a curved arm on the connection. This, too, is a simplification in piping. The third unconventional feature is the introduction of short levers between the cams on the camshaft and the bottom of the tappet rods for working the valves. A hinged lever with a hardened steel roller on its end riding on the cam is hinged at its other end in a bronze holder held into a port in the side of the crankcase, and shown in the motor illustrations. The valve tappets, made with or without rollers on their lower ends, rest on these levers, with the result that a direct lift without side thrust is imparted to them through the cam raising the outer end of the lever. The guides for the valve tappets in the top of the crankcase are Parson's white brass held in place by crow-feet yokes with a center bolt fitted with nut and lock nut for security.



END VIEW OF MARMON MOTOR

The Marmon lubricating system is largely retained. It comprises a sump or crankcase basement filled with 3 gallons of oil, which are taken by a pump and delivered to the three bearings of the crankcase. From these the oil passes through the hollow crankshaft to the crankshaft throws and after lubricating these passes up bores in the connecting rods to the wrist pins in the pistons. The overflow returns to the crankcase. Uniform pressure is maintained in the oiling system by an adjustable automatic relief valve conveniently placed and a gauge which shows the pressure of the oil flowing through the system. The cylinder walls, camshaft and bearings and other motor parts are oiled from the throw-off from the cranks and when drained back into the case refurnishes the 3-gallon supply which is filtered, used and reused. Structural points to be noted are: Two-part aluminum crankcase, with the upper half fitted with webbing between the supporting arms on which can be carried the water pump on the left and the magneto on the right; enclosed half-time gears in front with support for cooling fans carried on the casing; the crankshaft is a 2-inch forging with a flange for bolting the flywheel to; drop-forged connecting rods, 13½ inches from center to center, with Parson's white brass bushings and liners of the same material; bearing caps for the crankshaft

WATER-COOLED MARMON

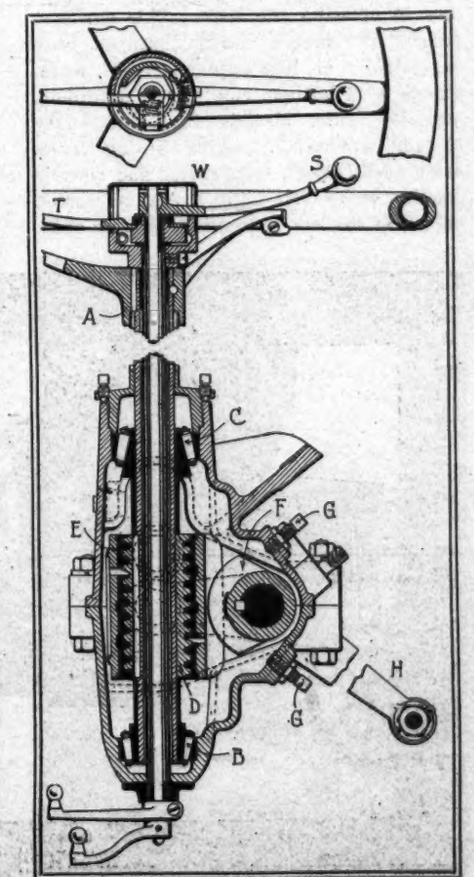


SIMPLE INTAKE MANIFOLD, MAGNETO AND TIMER ON MARMON'S NEW CAR

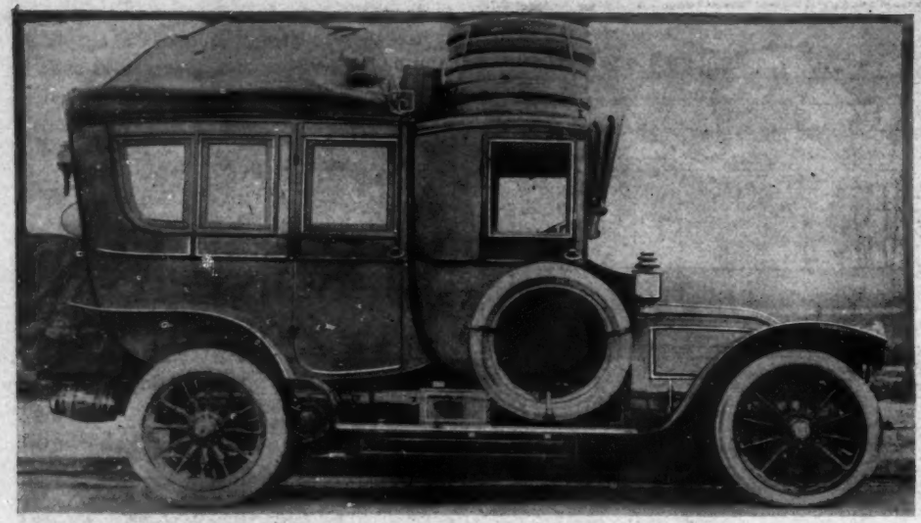
held by bolts which rise through the case and are used for holding the cylinders to the case, thereby tying the cylinders and crankshaft together; pistons fitted with three rings and two oil grooves; exhaust manifold made in two parts, with a slip connection in it between the pairs of castings; X-shaped yokes for retaining two intake and two exhaust valve cages for each cylinder pair, and timer on a short vertical shaft at the right rear, with the drive taken from the intake camshaft. Intake and exhaust valves are made interchangeable and of 2¼-inch diameter; two ignition systems are fitted, a high-tension magneto with spark plugs over the intake valves constituting one system; and a storage cell, four-unit coil, commutator and spark plugs over the exhaust valves.

First in the transmission system is the multiple disk clutch carried within a tubular extension on the flywheel hub and operating in oil. Its two sets of disks are bronze and steel, the bronze disks having cork inserts. A series of small coil springs engages the disks and other springs aid in separating them in disengagement. In order to eliminate any possibility of shifting gears with the clutch engaged an interlocker is interposed between the clutch and gearset. A brake slows the speed when they are disengaged, thereby making gear shifting easier. Close in the rear of the clutch, yet separated therefrom by a crosspiece of the frame, is the selective gearset, with three forward variations, both shafts carried on annular ball bearings and no gears in mesh when driving on the high speed. The change speed lever has a forward and back movement without the accepted H slot or gate. The connection from it is through two short rods with adjustable ball joints directly to levers on the gearset. The aluminum housing for the set is in the upper and lower halves, with the bearings located in the plane between them; for the casual inspection a large cover plate can be removed. The rear axle, a floating design, has the driveshafts carried on Timken rollors.

In the running gear are internal and external brakes on the rear wheels, the brake shoes lined with camel's-hair and brake applications through equalizers extending across the body frame. The internals are pedal-applied, the externals by side lever. The forward axle is an I-section piece with integral spring seatings, which are underneath the axle owing to the use of elliptic springs and the clipping of them beneath the axle; ball bearings in the upper end of the axle yokes carry the load. Annealed steel forgings are used for the yokes and steering arms. The steering gear is of the adjustable roller-bearing type used last year, in which the steering column A is mounted on roller bearings B at the bottom of the aluminum housing and C at the top, thus supporting the steel screw and bronze nut between them. Both of these bearings are adjustable by a single nut on the top of the case. The steering arm, a one-piece forging, is mounted on the same type of bearing with the single adjusting nut placed at one end. The gear mechanism is confined to the steel worm D on the coil, working in the bronze nut E with its lining of hard babbitt. Bronze pins forming part of the nut extend from each side and carry slotted steel links, the lower ends of which connect to the two arms on the yoke forging, to which the steering arm is attached. A wing segment F in the center of the yoke forging works in the bronze nut to prevent its turning and to relieve the links from twisting. Set screws G in the casing act as adjusting stops on the wing segment, thereby regulating the movement of the steering arm H. Instead of ratchets for holding the spark and throttle levers on the top of the wheel friction systems are in use. This is partly illustrated in the line diagram on a preceding page in which the lever S attaches to the central rod of the column and anchors in any position through a cork plunger which acts against the casing W over the top of the column. The other lever T is held in any position through a cam ball and ball scheme. Wheels are 34 inches in diameter and carry 4-inch tires, the wheelbase is 114 inches, and the body is an aluminum production as made for years by the company. Cast aluminum is carried on the wood framework.



MARMON STEERING COLUMN AND GEAR



C. G. V. Car Used for Mountain Touring

The Marmon roadster is the same as the model H touring car except that the front axle is placed farther ahead of the radiator and the rear axle brought up closer to the seat, maintaining the same 114-inch wheelbase. The rumble seat and box are removable so that a trunk may be carried or a two-passenger rumble seat added.

BODY INDIVIDUALITY

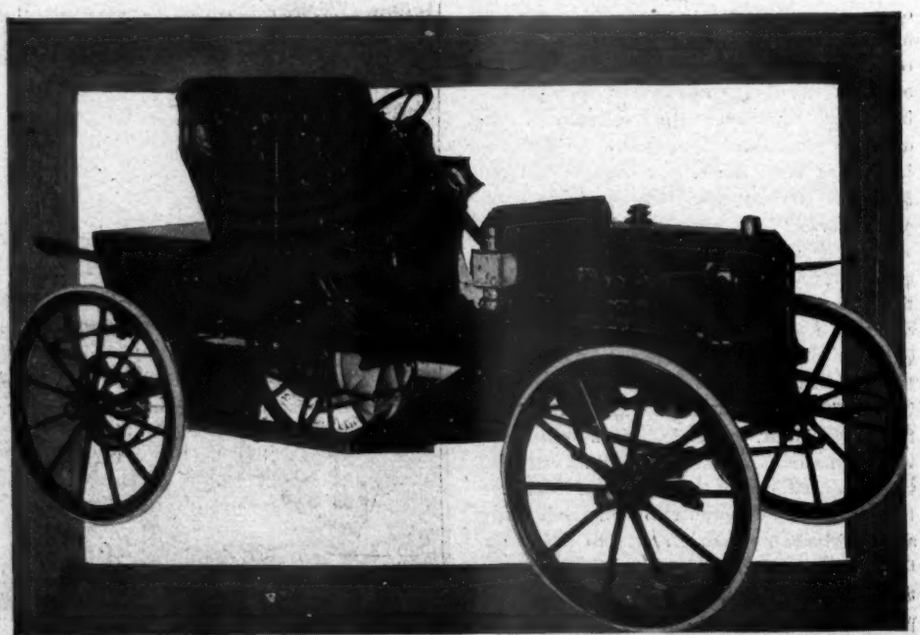
On these pages appear three examples of body originality: a Stoddard-Dayton park victoria, Pope Toledo old English coach and a C. G. V. Pullman touring car for six. The Stoddard Dayton is a special body carried on the model 8N chassis, which has a four-cylinder 18-horsepower motor with 3⅛ by 3¾-inch cylinders cast in pairs with opposite valves. The wheelbase measures 101 inches, tires are 30 by 4 inches, and the weight 1,400 pounds. The chassis is fitted with three-speed selective gearset, transmission and rear wheel brakes and storage cell ignition. The attractiveness of the body consists in the absence of no back to the front seat, the open Victoria effect, with characteristic hood and the three-style fender, one for the front wheel and two for the rear, one covering the wheel, and the other guarding the front side of the step. The vehicle with its 101-inch wheel base is small and excellently suited for park or boulevard work.

The old English coach style of body was revived a year ago by an American builder, but along considerably different lines than that shown in the Pope-Toledo style. Historically the old English coach is an interesting vehicle. In southern Europe a coach would accommodate a family of average number, and each coach was named some simple title, such as "Old Times," "Good Luck," "Pleasure," etc. About the same time, in France a similar vehicle was introduced, known as the "Diligence." When Louis XVI. came to the throne, he wanted a coach which would be representative of his age, and ordered one built, combining the old English idea with the idea of the French "Diligence." The result was a vehicle having the strength and durability of the old English coach coupled with the grace and elegance of the French "Diligence." The Louis XVI. coach rapidly replaced the old idea in both countries, and became a popular conveyance. The Pope Toledo coach is a revival of the Louis XVI. design. The body is finished in canary yellow, with black stripping, or, in the language of the shop, picked in black. The interior is upholstered in old English whipcord with French broad lace; prima vere wood-work.

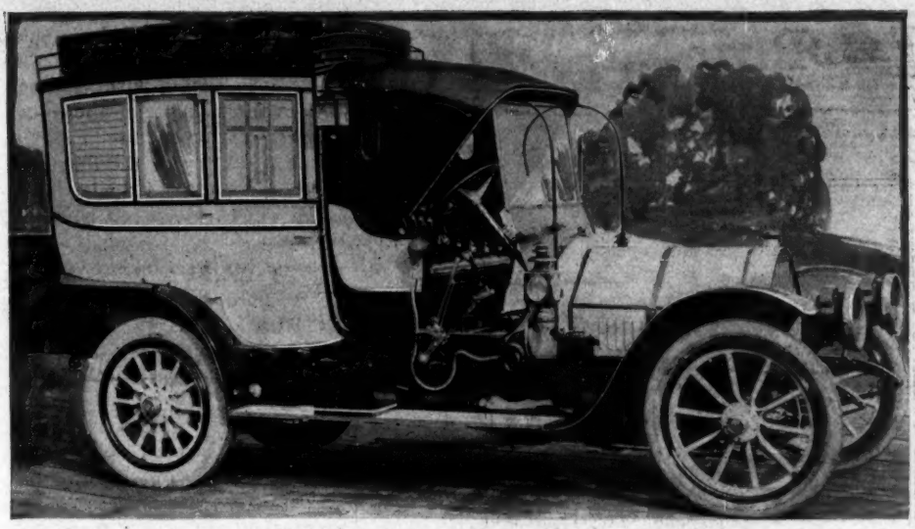
The third body style is a 75-horsepower C. G. V., with six-passenger capacity, which was used by a New Yorker last summer in crossing the Alps. This car is a palace on wheels, being equipped with berths for four, like Pullman berths, washstands with hot and cold water, bathroom, electric lights, electric fans, stationary clocks, card table, folding dining table, salon china closet, kitchenette and electric cooking stove. At night a tent is erected on top of the car to provide sleeping quarter for the two mechanicians who occupy two folding beds. As illustrated it is well equipped for a long outing with its stock of the casings over the driver's canopy and its varied luggage strapped on a baggage rack at the rear. On top of the limousine compartment is the folded tent with many of the other requisites. Every possible bit of space is utilized.

MOTOR BUGGY OR RUNABOUT?

In the Mier motor buggy 32 and 34-inch wheels with 1½-inch solid rubber tires make it doubtful whether the vehicle should be classed with motor buggies or small runabout cars. The typical motor buggy class generally uses 40 and 44-inch wheels, the employment of which adds materially in altering the appearance of the car. Irrespective of whether it is classed as a motor buggy or runabout the Mier motor Carriage and Buggy Co., Ligonier, Ind., has invited attention to the use of two vertical cylinders in vehicles of this class, there being but one or two other makes using this style of power plant. The motor carried under a forward bonnet has a 12-horsepower rating and 4 by 4-inch cylinders. The cylinders are separate, water-cooled castings and the motor operation is on four-cycle principles. Next of import to using a pair of vertical cylinders is the employment of a conventional friction transmission system, which employs a friction disk on the end of the contained crankshaft, with a fiber friction wheel slidably mounted on a cross shaft. From the ends of this cross shaft chains connect with the rear road wheels. In making speed changes the fiber wheel is shifted on the cross shaft by a side lever and for engagement with the friction disk the cross shaft is swung forward. On this cross shaft are the differential and a foot brake operating on a drum outside of the differential. Lubrication of the entire machine is by a pressure oiler located on the



Mier Motor Buggy with Vertical Two-Cylinder Motor



POPE-TOLEDO OLD ENGLISH COACH CREATION

rear side of the dash. The vehicle carries a 12-gallon gasoline tank under the seat, uses a large-sized radiator forming the front of the hood and employs jump spark ignition. All told the power and transmitting plants are up-to-date creations. In the running gear such parts are employed as axles of 1⅛-inch square cross section with rollers for carrying the road wheels; worm and sector steering gear, with hand wheel and throttle and spark control beneath the hand wheel; angle iron frame with 1½ and 2-inch angle arms of ¼-inch stock; four full elliptic springs and fenders with connecting running board. The vehicles are made in two models, A and B; the former with partially divided seats and slanting rear compartment, and B with square-shaped box compartment on the rear deck.

MOTOR CAR LITERATURE

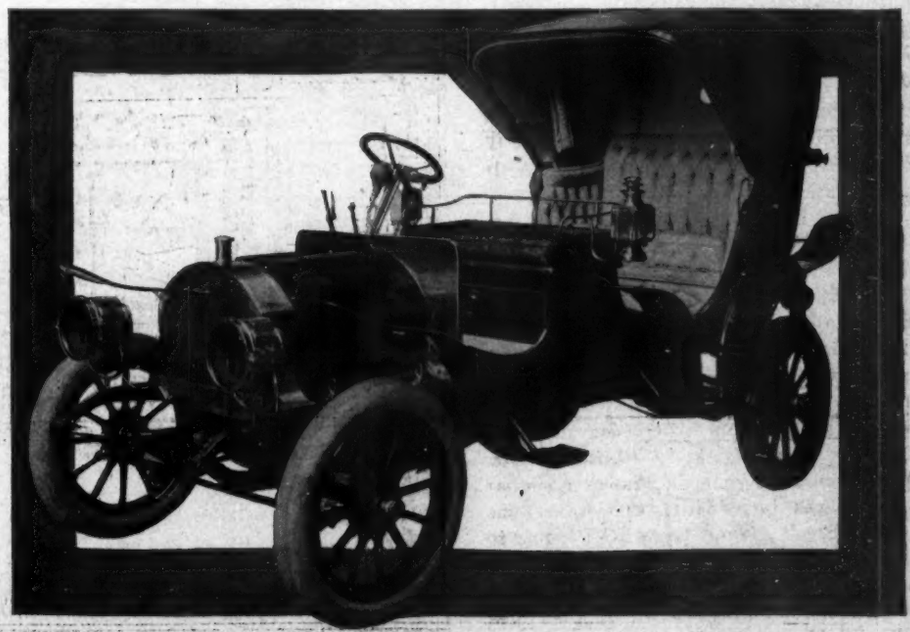
The 1908 "Hand Book of Gasoline Automobiles," issued by the Association of Licensed Automobile Manufacturers, is in circulation. The alphabetical list in the front of the book shows forty concerns, only thirty-one of which have models listed, however. These thirty-one illustrate and give specifications of 113 car models. Franklin leads with eight models; Knox and Cadillac have seven each; Packard, Peerless and Locomobile, six each; Columbia, Stevens-Duryea, Waltham and Buick, five each; Matheson, Northern, Pierce, Corbin, Oldsmobile, Lozier and Studebaker, four each; Autocar, Winton and Thomas Flyers, three each; Royal, Elmore Stearns, Pope Motor Car Co. and Haynes, two each; and Walter, Pope Mfg. Co., Apperson, Thomas Detroit, Hewitt and Selden, one each. Alden Sampson and the Simplex Automobile Co. have not any models listed. In the back part of the book is a list of seven importers who are members of the association and who import thirteen makes of cars, none of which are listed or for which specifications are given. The style of the book is the same as heretofore except for a page on the new horsepower formula.

"A Record, Not a Prospectus," a large-sized paper-covered booklet issued by the MacManus-Kelley Co., Toledo, O., contains a great many of the sample advertisements prepared by this company which have appeared in class journals and magazines within the past year. Included in the booklet is an advertisers' guide of sixteen pages containing the names of class journals and magazines, together with the location of each, their circulation, size of pages, when their forms close for press, the advertising page rate, the line rate, discounts and column width. The book is a most valuable one because of this guide.

The 1908 "Automobile Technischer Kalender" for 1908, which translated becomes the Technical Automobile Calendar, has reached America. As heretofore it is an excellent hand book of the motor industry printed in German and containing 681 pages. The book opens with many pages of arithmetical tables used in engineering work; following this are formulæ for calculating different factors of construction; after these comes a group of chapters on the motor car, in which every part of it is considered and illustrated. The illustrations contain parts from the best known European cars. Altogether it is a valuable volume and is published by Verlag Von M. Krayn, Berlin, W. Germany.

The 1907 "Year Book of the American Automobile Association" is a 125-page cloth-covered volume. It contains the names of the association officers and committees; the officers of federated state organizations; federated clubs with their secretaries; unfederated clubs; sixteen pages covering the history of the A. A. A.; six pages of headquarter notes; ten pages on the racing board, including five records, etc.; eight pages on the touring board, together with a tabulation of the cars and their work in the Glidden and Hower runs; four pages on the good roads movement; a three-page report from the legislative board; copy of the bill on federal registration introduced last February; tabulation of the existing motor car laws throughout the country, and sample by-laws for state associations. The book contains a great amount of valuable data and is a most creditable production.

The "Automobile Hand Book" of the tours from the Twin Cities to points in Minnesota and Wisconsin has been issued by the touring committee of the Minnesota State Automobile Association and published under the copyright of the American Automobile Association with which the Minnesota state organization is federated. The book is of panel size—pocket width—contains ninety-eight tours and a great many maps. Each tour is printed in paragraph form, with name and length of tour at start. The book further contains the names of the members of all clubs affiliated with the state organization with their addresses.

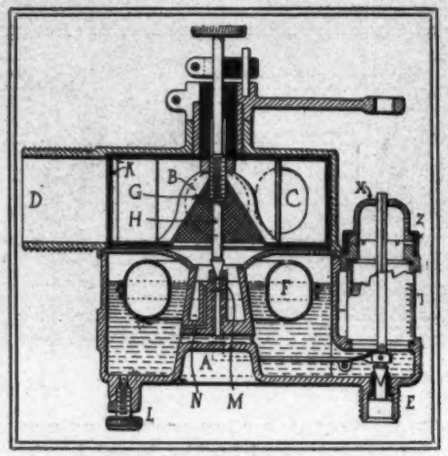


STODDARD-DAYTON PARK VICTORIA CAR

DEVELOPMENT BRIEFS

NEW IDEAS BY WATT

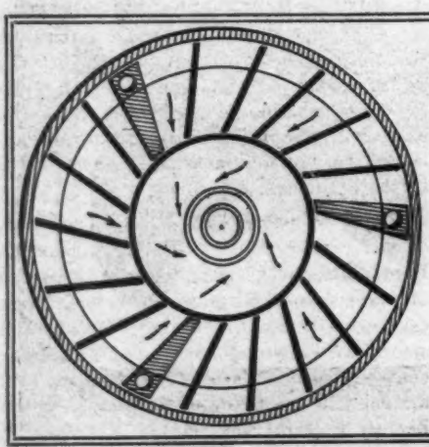
In the Watts-Detroit carbureter, a product of the Watts-Detroit Carbureter Co., Detroit, Mich., such conventionalities as spring-contained auxiliary air valve, concentric float and adjustable needle valve are found, but not a few original ideas are marshalled into use in the arrangements of these parts. For example, the concentric hollow float F does not act directly on the intake needle valve V guarding the entrance of gasoline through the opening G; but, on the contrary, acts through a steadying disk D, which is suspended in the gasoline in the float chamber FC and is connected to the float through equalizing levers L pivoted at their centers on permanent brackets projecting from the float casing and attaching at one end of the under side of the float and at the other end to the steadying disk D. A series of springs S tends to prevent fluttering between the disk and float. The claimed value of this construction is that the disk D, constantly submerged in gasoline, has a steadier up-and-down movement, being free from much of the fluttering of the ordinary float when the car is traveling fast. The disk D acts as a dash pot. The air and gasoline systems contain a few features. Main air enters by way of the central opening A and rises through a restricted tubing past the nozzle N, which in shape resembles an inverted cone and which turns the gasoline and air currents outward, throwing them against a peculiarly slotted inclined surface M containing fixed radial guide ribs or grooves which confine the air within gradually narrowing channels, so that its speed is accelerated to the rate naturally due to the amount of suction. A suction pull of 1 pound per square inch produces a claimed flow of 332 feet per second, which is said to be sufficient to rotate the contents of the mixing chamber 500 revolutions per second. This creates a powerful centrifugal force, which carries the gasoline particles to the outer edge of this circle, where they contact with air jets. Auxiliary air enters all around the carbureter casing through the entrances AA past the spring-controlled automatic air valve W. Mixture escapes to the motor through the vertical passage Z. The needle valve N is adjustable by the hand wheel with a lock nut at the base of the carbureter; C shows the gasoline passage from the float chamber to the nozzle; and XX is the line through which the horizontal section shown to the left is taken.



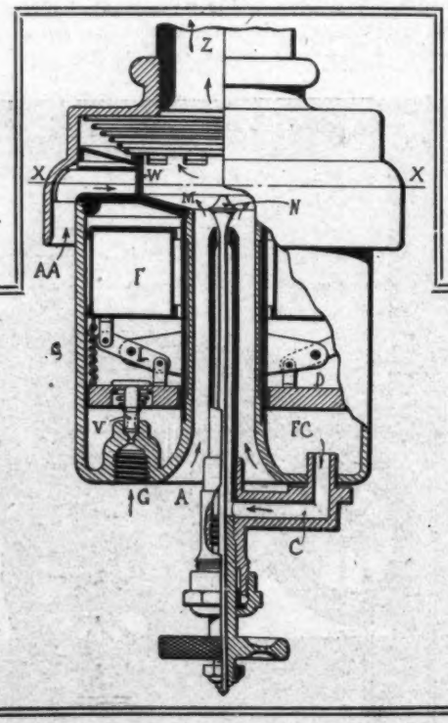
E. C. B. 1908 CARBURETER

HAS THREE AIR INLETS

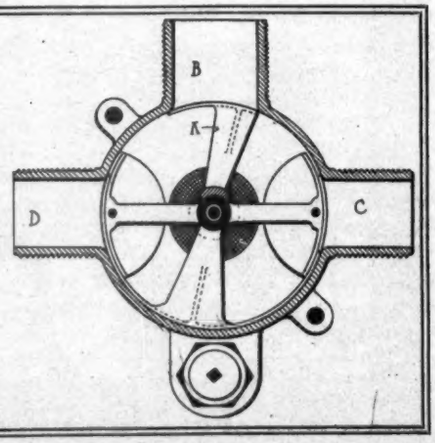
In the E. C. B. carbureter are three air inlets—a normal inlet A, in which the air current converges at the nozzle tip, and two openings C and D, which can be regulated, each protected by a sliding throttle so the air passage can be varied from the steering wheel. The opening C is for cold air, D for heated air; and according to the atmosphere temperature the shutter valves controlling these openings can be set for a majority of cold air and a minimum of hot or vice versa. The engine connection B is regularly supplied without a throttle, but should it be desired then a throttle K is fitted. The principle preferred is to control the entering air rather than the mixture passing to the motor. Apart from its threefold air inlet scheme, the carbureter has two spraying nozzles—a tiny one N always open and which is just large enough to keep the motor running when idle; and a major one M, which is controlled by a needle valve H, which valve is raised and lowered as the air entrances are varied. A conical wire screen G is intended to prevent danger in backfiring. The opening orifices of both nozzles N and M are well above the bottom of the float chamber, which allows of water, dirt and heavy gasoline lying in the lower portion of the float chamber and not reaching the jets N and M; further, should the seating be destroyed the pedestal portion containing them can be removed and a new one used without destroying the carbureter. Gasoline enters by the connection E, controlled by a needle valve operating in response to the float F. The level of gasoline is visible from the graduations T on the glass part of the casing; and the float level is adjustable by loosening the lock nut Z which holds the cone cover X, which acts as a guide for the needle valve stem. The guide X rests in a series of slots and by raising it out of one slot and turning through part of a revolution until in position to drop into another slot accomplishes the work of changing the gasoline level. The Broderick Mfg. Co., Detroit, makes it.



PLAN THROUGH XX OF WATTS-DETROIT CARBURETER

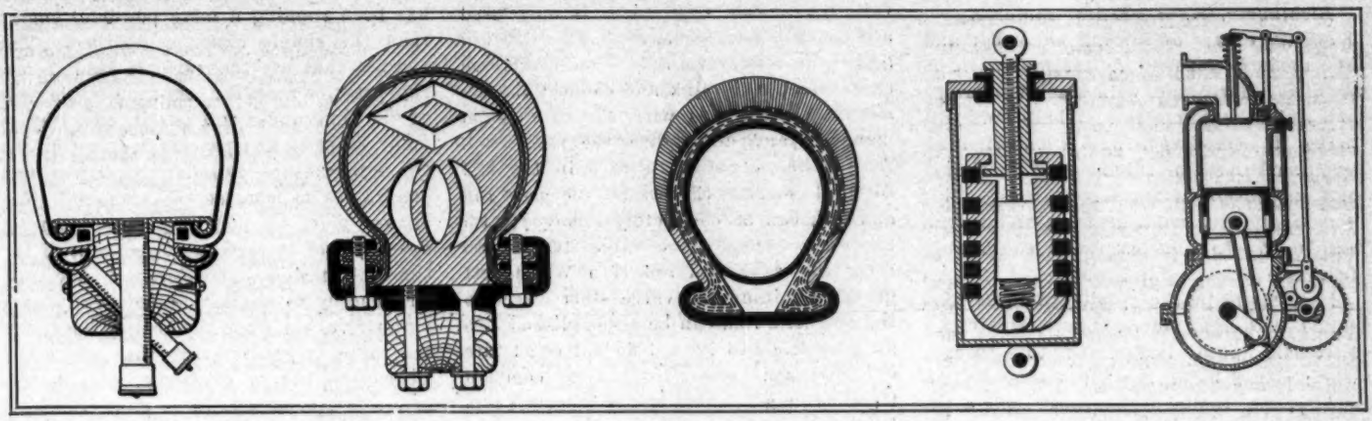


SECTION OF WATTS-DETROIT CARBURETER



HORIZONTAL PLAN OF E. C. B. CARBURETER

CURRENT MOTOR CAR PATENTS



DURYEA'S TIRE | MCDOWELL'S TIRE | HARRIS' TIRE TREAD | WHITCOMB'S ABSORBER | SALTER'S ENGINE

Rear Axle Gearset—No. 875,401, dated December 31; to J. Worthington, Manitowoc, Wis.—On the rear axle are three sliding spur gears. A countershaft located in front of and parallel to the axle carries two combination spur and bevel gears and one fixed sliding spur gear. Between the countershaft bevels is a driven pinion on the end of the driveshaft connecting with the motor. It drives into either the right or left bevel for reverse or forward speeds. By sliding the spur gears on the rear axle any of two forward speeds or reverse can be obtained.

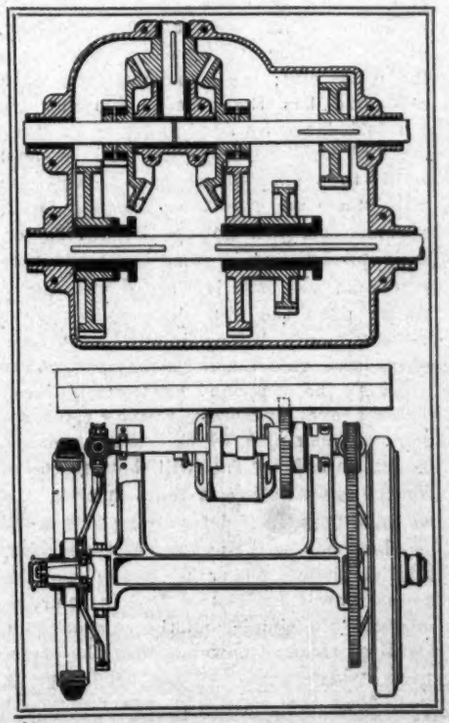
Planetary Steering Gear—No. 874,989, dated December 31; to G. G. Porter, Syracuse, N. Y.—On the base of the steering pillar is a bevel gear in mesh with a bevel pinion on a short horizontal shaft or carrier. This carrier has an offset on which it carries a spur pinion, which pinion meshes with a rigid internal gear and with another similar-sized internal gear on a horizontal shaft carrying a radius arm for connections with the drag link of the steering pillar. By making the rigid internal gear with a different number of teeth from that used on the revoluble internal gear a suitable steering turn is effected.

Pneumatic Tire—No. 875,053, dated December 31; to C. E. Duryea, Reading, Pa.—This patent refers not to the design of a tire but to its attachment to the rim. The rim carries in each side a slot for receiving the square-shaped bead on the edge of the tire casing. Besides securing these beads in place by detachable curved flanges, semi-circular pneumatic rings are used, which, when inflated, crowd the beads well into the grooves and besides preventing their escape eliminate rim cutting.

Ball-and-Socket Support—No. 876,272, dated January 7; to E. J. Gulick, Mishawaka, Ind.—The patent refers to supporting a radiator through ball-and-socket connections on the side pieces of the car frame. A bracket rigid with the end of the radiator rests on the top of the frame, the bracket shaped to form the ball portion of the joint and the car frame shaped to form the socket portion. A vertical bolt extends through the ball-and-socket parts and extending beneath the frame takes a coiled spring between the frame and the nut, the spring allowing sufficient tension to permit the ball-and-socket action to take place should occasions, due to strain, arise.

Shock Absorber—No. 875,759, dated January 7; to L. Whitcomb, Brookline, Mass.—A vertical cylinder attaches to the car axle; within this is a slightly coned plunger with cork inserts in its sides; within this plunger is an expander—wedge-shaped—which on its upward movement expands the plunger, increasing its friction with the cylinder, thereby giving any desired absorption. The plunger attaches to the car frame, its connecting rod being threaded through a sleeve with a disk on its lower end, which disk is held within a circular slot in the plunger.

WORTHINGTON'S REAR AXLE GEARSET



BUCKWALTER'S FRONT WHEEL DRIVE

Front Wheel Drive—No. 875,892, dated January 7; to T. V. Buckwalter, Altoona, Pa.—Carried on each front road wheel is a spur gear which is driven from an electric motor as follows: A crossshaft, spur gear-driven from the motor, carries on its end universal joints and over these universal joints spur pinions that mesh with the spur gears on the road wheels.

Tire Casing—No. 875,994, dated January 7; to W. D. Harris, Philadelphia, Pa.—The tire casing is a combination fabric and rubber; the fabric within the rubber forming the tread portion. Embedded in the rubber part are two series of fibers, one with the fibers circumferential and the other with them vertical to the tread. The series of fibers are interwoven.

Two-Cycle Engine—No. 876,020; to W. A. Salter, Cedar Point, Kan.—The mixture is taken into the combustion chamber through double bypass channels in the cylinder walls, the reciprocation of the piston covering and uncovering the ports. The exhaust is liberated through an excessively large, mechanically-operated poppet valve in the cylinder head.

Resilient Solid Rubber Tire—No. 875,726, dated January 7; to V. H. McDowell, Lynn, Mass.—The solid rubber tire has a diamond-shaped air space in its tread portion, with the major diameter of the diamond transverse of the tire; and in the body centrally above the base is a vertical oval air chamber with a crescent-shaped chamber air to right and left of it. The tire has lips with two side projections so an M-shaped flange fits over them.

THE READERS' CLEARING HOUSE

REPAINTING A CAR

Richibucto, N. B.—Editor Motor Age—I am the owner of a small motor car and am about to repaint it. At present it is painted a dark blue, with black trimmings and yellow running gear. What colors will make it look larger and what kind of paint shall I put on the inside of the frame and suspension arms to resist oils? Will you kindly give me a drawing of the rear axle of a chain-driven machine?—Chauffeur.

It seems to be the opinion of those consulted that light colors, if any, will make a vehicle appear larger. On this theory, white would make it appear largest, but most people would prefer some light color other than white, as less affected by dirt. Certain yellows have been used very effectively and rather extensively in motor car painting, while French gray is just now very popular for cars of the roadster type. After painting the frame and arms with any paint desired, varnish them over with a couple of coats of white shellac, made up with grain alcohol. This resists oil better than anything. If yellow shellac is used it will be found that its transparency is so poor as to impart a pronounced yellow tinge to the color beneath it. The objection to wood alcohol is that it makes a less durable varnish than can be made with grain alcohol. Motor Age has no drawings of rear axles of chain-driven machines. Moreover, the writer does not even say whether he means double-chain or single-chain drive. However, pictures of both kinds have been published from time to time in past issues of Motor Age. Also, some of the parts manufacturers who advertise in Motor Age may carry blue prints of the axles they handle, to distribute to prospective customers.

MORE ON STEAM PRACTICE

Springfield, Mass.—Editor Motor Age—I hope you will allow me one more letter in Motor Age on steam practice. As I am far enough out of the elementary class not to confuse a valve gear with a driving gear, I would like to explain and also uphold my statement of direct valve motion of the Stanley engine. Contrary to Mr. Harland's statement, I say the Stanley does not use the accepted Stephenson valve gear except to have it incorporated in the valve gear; only on reversing is the Stephenson in use at all. In the Stanley, I acknowledge, we have all the elements of a Stephenson, but the forward eccentric rod is held in full forward motion by spring pressure; for reversing a pedal button overcomes this pressure and throws into use the reverse eccentric rod, which upon the release of the foot button the spring again forces into engagement the full forward motion. Thus the Stephenson is used only on reversing, which is also full gear. The link then is only used as a cross-over between the forward and reverse eccentric rods. Therefore, one can eliminate the link and connect the desired eccentric rods with the valve stem manually and accomplish the same end. As the valve gear is always in the full forward position, the reverse eccentric rod and link can be completely removed; also the same travel of the valve stem by an eccentric crank and rod of a Walschaert gear, by joining the valve stem direct to the eccentric rod, can be accomplished. As an eccentric and its rod do not constitute a Stephenson valve gear but are common to all valve gears, and as one eccentric and its rod do all the work, Mr. Harland must acknowledge the Stephenson is not working against a pressure of 500 pounds or more. Thus my statement that the Stanley does not use any of the accepted valve gears with their variable cut-offs. I am glad to note Mr. Harland is in favor of compounds. To show that the two authoritative statements—that of the Master Machinists' Association and the Chicago, Milwaukee & St. Paul railway—do not contradict your own deductions, therefore not believing either as facts, let me say that the letter from the Chicago, Milwaukee & St. Paul railway does not contradict any opinion that may have been deducted on compounds being economical. One may ask how two such opposing statements can be true. As compound engine service—automobile or locomotive—is, I think, identical, I should-like to explain. In 3 months' service two combined evils of economy will more or less eliminate such economy, namely, drifting and simpling. Drifting is the worst evil; the economical side of a compound has the other. Simpling we counterbalance by advantages as in starting and hard hill-climbing. A compound while thus simpled, though it will use more steam and fuel than designed for as a compound, will go up the hill faster, start quicker and in some cases with the same load will have left the simple engine stalled upon the hill. This extra power has cost money, but as time is money nowadays have we not saved money by quicker runs? As the compound has certainly used power above the normal rating of the engine, while simpled, which amounts can not be determined, the fuel will show excessive for the lower rating in the 3 months. As we have no way of determining how much this has been or the number of times used, this maximum power is figured as the normal power for cost of fuel in comparison with the simple and the compound of identical tractive power. Thus the statement, which under certain conditions is true, that the compound has not saved money in fuel. But the mechanical department has not taken into account that it has been running a more powerful engine than the simple under comparison. The engines that use the variable lead in marine practice must run less than 90 per cent of the time under full power, else why so many schemes and patents for cutting out the low-pressure cylinder on triples and quadruples to increase the economy? The answer must be that they run under reduced power more than 10 per cent of the time. A marine engine does not vary from one loading to another as frequently as a locomotive, but when the loading does vary the range is greater than that which the locomotive has to overcome, because the power in marine service is proportional to the cubes of the speed which show that the loads vary greatly for marine engines. In regard to condensation in a quadruple, let me say that the second, intermediate and low cylinders are not equivalent to the low of a triple. To illustrate, suppose we take two engines, a three-cylinder triple and four-cylinder quapruple, working with twelve expansions each, which gives four per cylinder for the triple and three for the quadruple. If each engine is throttled so that only eight expansions take place the lows on both engines will be dead, but the second intermediate of the quadruple will be doing two expansions of work, thus requiring different treatment than the dead low cylinders do, and thus permitting the use of a piston valve in the second intermediate cylinder. I would believe in the balanced slide if it were not for the mechanical details referred to that in actual practice require the theoretical zero to be raised to the actual 50-55 per cent pressure on the valve.—C. F. M.

FAVORS HORIZONTAL OPPOSED

La Rue, O.—Editor Motor Age—Kindly tell me why it is that the two-cylinder opposed, chain-driven machines made such good records in the Glidden tour and other events throughout the country? I have been reading the articles on the four and six-cylinder constructions. I would now like to read a little "out of date construction" regarding the "1,250 runabouts."—Newton H. Davis.

The only reason that can be given for the excellent performance mentioned is that the cars in question are good cars and were competently handled on the occasion mentioned. At the same time this fact has no particular bearing on the implied criticism made of four and six-cylinder machines. It is now pretty well recognized by intelligent users as well as by designers that each of the present standard constructions has its advantages and disadvantages. In the field of horse use, one-horse, two-horse, four-horse and other combinations are common and prove use-

ful, yet the existence of no one of these constitutes the slightest reflection upon the utility of the others. Why should not the diversity of constructions in the motor car field be similarly regarded?

A MUDDLED EXPERT

Aurora, Neb.—Editor Motor Age—In a clipping from a recently published motoring paper the question is asked: "From D. O. P., New York—On an automobile rounding a short corner on a level track at a high rate of speed which wheels will have the tendency to leave the ground, the inside or the outside?" And the answer is given: "Reply—In making a turn the outside wheels move faster and consequently acquire the greater centrifugal force and tendency to leave the ground. The cause of an overturning of the vehicle, however, is due to the outside wheels hitting some obstruction which keeps the wheels down and repels the centrifugal force, but meantime the force on the inside wheels continues and they have a tendency to lift and the vehicle goes over." The answer by the editor is so absurd, and displays such ignorance, it deserves some comment.—I. W. Haughey.

The "authority" who is guilty of the interesting absurdity submitted certainly takes the palm for verbose ignorance, and deserves all the roasting that possibly can be handed him. Such ludicrous efforts of the untechnical space writer are more often encountered in the motor columns of daily papers. The "repulsion of centrifugal force" particularly deserves a place in engineering archives alongside perpetual motion discoveries and the like.

A QUESTION OF POWER

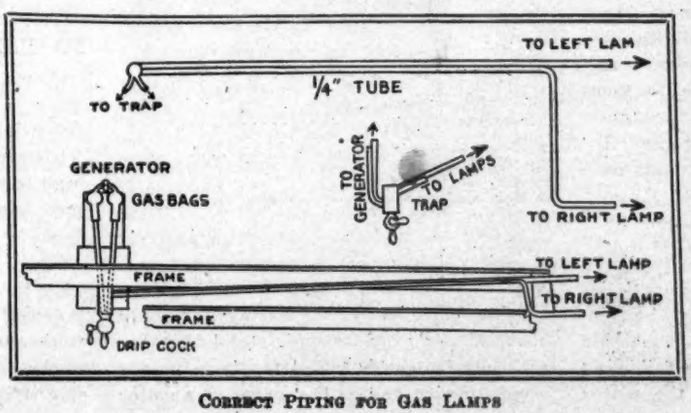
Kirkland, Ill.—Editor Motor Age—Please let me know through the columns of the Readers' Clearing House which will develop the more power, a two-cylinder gas engine with a 5-inch bore and 6-inch stroke, four-cycle, or a two-cylinder gas engine with a 5¼-inch bore and 5-inch stroke, four-cycle; also, what percentage, if any, is lost by using shaft drive in place of chain, the workmanship of each supposed to be the same? Is there any difference in power between a planetary and a selective type of sliding transmission?—H. B. Rowan.

At a given piston speed, this being the limiting factor in controlling the speed of an engine, and all other conditions being equal, the 5¼-inch by 5-inch engine will develop 1.323 times as much power as the 5-inch by 6-inch engine. The percentage of friction loss varies so greatly in different transmissions of the same type that it is impossible to say what difference there might be between two transmissions of different types. The quality of the bearings will easily account for a greater difference than can be due to the type of drive. Other things being absolutely equal, it is probable that the double-chain drive, having more bearings than the other types, wastes slightly the more power, while a single-chain drive probably wastes the least, the propeller shaft coming in between. Each type has advantages and disadvantages that far outweigh the altogether minor consideration of friction loss. There is no difference in the capacity to transmit power between a planetary gear and a sliding gear of the selective type. With either, a certain amount of power is lost in overcoming friction, the exact amount varying with the quality of workmanship, the nature of the bearings and the speed that happens to be engaged.

FAULTY PISTON RINGS

Marietta, Okla.—Editor Motor Age—I have a three-port two-cycle two-cylinder motor, 4½ by 3 inches, made by Du Brie, of Detroit, that I am having trouble with, and would like to ask you about. My trouble is in base firing, when running slowly. It will run 1,000 and 1,200 revolutions per minute for quite a while, then stops, when I find some gasoline in the crankcase of one of the cylinders. The cylinders do not have the same compression—one is much higher than the other. The gasoline accumulates in the one with the highest compression. The motor is fitted with a 1-inch Schebler carbureter, and both inlet pipes are the same length. If I reduce the supply of gasoline it base fires worse; if I increase the supply it accumulates in the high-compression crankcase side of the motor. I have been thinking of using two carbureters. Do you think this would be the quickest remedy; also will it make a difference if the carbureters are of different makes?—R. R. S.

Apparently the trouble is due to the fact that the leakage of gas past the piston rings of one cylinder prevents that cylinder from taking a full charge; consequently this cylinder does not suck on the carbureter strongly enough to draw sufficient gasoline. If the engine were in proper order, two carbureters should be entirely unnecessary. The carbureter is certainly too small for the engine. Any type of carbureter having an automatic auxiliary air inlet is hardly suited to a three-port two-cycle engine under three cylinders, on account of the abruptness of the suction when the intake port is uncovered. For this reason better results might be obtained with a Holley or Marvel carbureter. The first thing to do, however, is to get tight piston rings.



CORRECT PIPING FOR GAS LAMPS

CORRECT PIPING SCHEME

Amesbury, Mass.—Editor Motor Age—In the early days, when we were giving our lamps road tests, we discovered that many times lights acted badly on account of defective piping. Many of the complaints we always investigated thoroughly were traced to defective piping and many a motorist has gone home in the dark due to water collecting in the tubes. At one time we used rubber tubing from the generator to the lamps, connecting the rubber only when the lamps were to be used and removing tubing during the day, being careful to remove moisture when stowing the tubing away. The above is all right, but at times when one wants to light up in a hurry it is a nuisance, and we have been using for some time, with much success, a system same as the diagram herewith. Any repairman can make and install this at slight expense, being careful to have all pipes pitch down to drip-cocks. The pipe to each lamp should be independent, except at the trap, and gas from the generator should enter the trap below the piping to the lamps. The drip-cock should be opened at least once a week and the pipe should be fastened securely to the frame so as to prevent chafing.—Gray & Davis.

TIRES ON ELECTRICS

Buffalo, N. Y.—Editor Motor Age—The relation the tire holds to the mileage and speed to be obtained from an electric motor car is not understood by either seller or user. That the tire is one of the most important factors in these particulars is not known to them. That they have tires—and they of rubber—is all that they have deemed necessary to know, but such is not the fact. The tires, if they are not of the proper construction and resiliency, will not only materially lessen the speed that can be obtained, but reduce the mileage more than half. In a gasoline car the kind of tires has no appreciable effect on the speed or mileage, but it is entirely different with the electric car. There are only so many amperes in a battery, to start with, and the faster they are taken out, the fewer miles will be obtained—on the same principle that the faster a person runs, the less distance he can cover. No matter how good the motor or the battery is, if the tires are not suitable the mileage will be unsatisfactory. During the past 2 years we have been making very exhaustive tests with all the different makes of tires, and have accumulated a large amount of data that is very valuable to all users of elec-

tric cars. When we state that we have run 110 miles on a single charge, and by simply putting another set and make of tires on the same car could only obtain 36 miles, it makes one sit up and take notice. The result is that we now have tires made expressly for our cars that enable us to get not only the speed and mileage so much sought for in an electric car, but the durability as well.—F. A. Babcock, president Babcock Electric Carriage Co.

MAGNETO QUESTION

Detroit, Mich.—Editor Motor Age—Will you kindly inform me through the columns of the Readers' Clearing House if the make-and-break on the Eisemann magneto ever becomes blistered, or does it just get dusty? Please tell me just how far apart it ought to be, what is the best way to fix it, and what is the best for lubricating the steering knuckle pivot, oil or grease? We used to have grease cups, but we now use oil.—M. Iback.

The contact points of the Eisemann magneto should seldom, if ever, require anything more than cleaning with gasoline. The maximum gap between the contact points should be about 1-32-inch. For lubricating the steering knuckle pivots use thin Albany grease and screw down the grease cup one or two turns every time the car is taken out, so that grease will always be seen escaping from the pivot bearings.

PROTECTING RIMS

St. Peter, Minn.—Editor Motor Age—Kindly advise me through the Readers' Clearing House whether shellacing or varnishing a rim will be a benefit to the tire, and if it will prevent rusting in of the casing? Is there anything else that can be used for this purpose?—Phil Dick, Jr.

Clean the rim thoroughly by scraping and by the use of sandpaper or emery cloth. Shellac may then be used, but an air-drying enamel will be better. If the rim is thoroughly cleaned and the enamel permitted to become hard, it will last for a long time. No rust will appear until the enamel is worn or chipped off and water is permitted to reach the metal.

MAKER OF THE BROCK

Victor, Mont.—Editor Motor Age—I saw in a recent issue of Motor Age a description of the Brock carbureter, made by A. A. Brock, of Chicago. As his address is not given, please do me the favor to supply me with this, as I desire to know more about his carbureter.—L. Lacaursiea.

A. A. Brock, Oxford building, La Salle street, between Washington and Madison streets, Chicago.

ENGLISH SHOW STATISTICS

Chicago—Editor Motor Age—Realizing the benefits to be derived from statistics which will enable a salesman to make comparisons between English and American motor cars, I have compiled the following table of statistics relative to the motor cars exhibited at the recent Olympia show and which may be of interest to readers of Motor Age. They are as follows:

ONE-CYLINDER

Cars exhibited	13	
Average horsepower	8.2	
Use magneto	3	23 %
Use chain drive	3	23 %
Use shaft drive	10	77 %

TWO-CYLINDER

Cars exhibited	53	
Average horsepower	11.6	
Use magneto	21	42 %
High-tension	12	24 %
Low-tension	3	6 %
Not specified	6	12 %
Chain drive	11	26 %
Shaft drive	42	74 %

THREE-CYLINDER

Cars exhibited	2	
Average horsepower	12	
Uses magneto	1	50 %
High-tension	1	50 %
Chain drive	2	100 %

FOUR-CYLINDER

Cars exhibited	327	
Average horsepower	26.3	
Use magneto	256	77 %
High-tension	179	54 %
Low-tension	48	14 %
Not specified	29	9 %
Shaft drive	251	76 %
Chain drive	74	23.3%
Electric transmission	2	.7%

Average weight of cars over 30 horsepower, 1,891 pounds.

SIX-CYLINDER

Cars exhibited	81	
Average horsepower	46.4	
Use magneto	72	88.5%
High-tension	57	70.1%
Low-tension	5	6.1%
Not specified	10	12.3%
Shaft drive	62	76.2%
Chain drive	17	20.9%

Average weight of cars over 30 horsepower, 2,326 pounds.

EIGHT-CYLINDER

Cars exhibited	2	
Average horsepower	41.6	
Use magneto	2	100 %
High-tension	2	100 %
Shaft drive	2	100 %

Average weight of cars over 30 horsepower, 2,050 pounds.

TOTALS

Cars exhibited	478	
Use magneto	355	74.1%
High-tension	251	52.4%
Low-tension	56	11.7%
Not specified	48	10 %
Chain drive	105	21.9%
Shaft drive	367	76.7%
Electric transmission	2	.4%

Comparison of the results obtained by the A. L. A. M. and R. A. C. formula for determining horsepower:

A four-cylinder motor with 102 mm. bore is rated at 25.7 horsepower—England.
A four-cylinder motor with 4.3 in. bore is rated at 29.5 horsepower—America.
A six-cylinder motor with 102 mm. bore is rated at 38.4 horsepower—England.
A six-cylinder motor with 4.3 in. bore is rated at 44.3 horsepower—America.

It will be noted that the American rating runs about one-sixth higher than the English.—J. V. Lawrence.

PROTESTS AGAINST WHEEL TAX

Chicago—Editor Motor Age—I would like to draw the attention of Motor Age readers to the proposed wheel tax in the city of Chicago, because I believe this wheel tax is entirely unfair and discriminating, therefore unconstitutional. The proposed tax is as follows:

One-horse wagon or vehicle	$ 5
Two-horse wagon or vehicle	10
Three-horse wagon or vehicle	15
Four-horse wagon or vehicle	25
Six or more horse wagon or vehicle	35
Motor car, two seats	12
Motor car, more than two seats	20
Motor car, trucks or coaches	30

It will be noticed that a touring car would cost $20 per year, whereas a one-horse vehicle, which may have the same seating capacity as a touring car, only costs $5 per year. I understand that the proceeds from this wheel tax is to go for street repairs, and as the owner of a motor car and user of streets, I am entirely willing to contribute to the proper maintenance of the streets damaged on account of my use thereof; but as a one-horse vehicle does more damage to the streets on account of the horse's shoes and steel tires on the vehicle than a pneumatic-tired motor car, it seems certainly unfair to charge four times the tax; furthermore, the average motor car owner like myself uses a machine not to exceed eight months annually. Horses are used the year around. Furthermore, the tax is to be used for the purpose of repairing the streets under the jurisdiction of the city of Chicago. I venture to say that 95 per cent of the motor car driving is being done on asphaltum boulevards under the jurisdiction of the park commissioners. The result in my mind is simply that the boulevard-using motorists are discriminated against in order to pay for the repairs of streets damaged by wagon traffic in all parts of the city, in places where, perhaps, a motor car never has even driven over the streets.—E. W. Vogel.

MIXTURE SEEMS RICH

Antwerp, O.—Editor Motor Age—Possibly you can tell me what is the matter with the motor in my Olds runabout. It starts all right and works well with the spark advanced, but as soon as I put my foot on the throttle the motor slows down. Sometimes it works fine on the throttle and spark for a few miles, but all at once the motor stops after slowing down gradually.—H. H. Ely.

If the battery is in good shape the indications are that the mixture is much too rich. Is it not a fact that when the motor is running at high speed there is no tendency to choke? Try cutting down the quantity of gasoline that is fed through the nozzle.

WHO MAKES THE KREBS?

St. Louis, Mo.—Editor Motor Age—I have a 50-horsepower motor in my machine and have considerable trouble with the carbureter. Please tell me through the medium of the Readers' Clearing House who sells the Krebs carbureter or inform me where I can learn this.—A. S. M.

Motor Age has never seen the Krebs listed and believes it is made only under license by manufacturers of cars. It is not in the last directory of the Paris show.

SO OLD IT'S A JOKE

New York—Editor Motor Age—To oblige a constant reader, please answer the following: Do the inside or the outside wheels of a motor car taking a curve at high speed leave the ground? Does the same apply to a locomotive on an unbanked curve?—Timothy P. Guinee.

The inside wheels, of course, are the ones that leave the ground as a result of the centrifugal force tending to bear the vehicle over on a curve. Centrifugal force works outward from a center and the inside of a curve is the side nearest the

center from which it is described. Consequently, the result is the same as when one pushes a toy wagon over. The wheels on the side to which the force is applied are the ones that lift. The same law applies to all vehicles on all curves, regardless of banking. Banking can only offset, not nullify, the force.

A VARIETY OF TROUBLES

Carson City, Nev.—Editor Motor Age—Kindly answer the following questions, which, I believe, have not been answered in Motor Age for the past year at least:

1—My car has floating rear axle. The power axle is merely a square bar of steel. By forcing, this bar has become twisted a full quarter turn and has probably run 10,000 miles that way. In overhauling the car should I heat and twist back to original position, should I heat and leave it as it stands with the idea of relieving the strain, or should I leave it entirely alone? Are such axles supposed to have any temper?

2—Given two engines of same stroke and cylinder diameter, one a two-cycle and the other a four-cycle, why does not the two-cycle develop twice the power of the four?

3—Can white bronze, or Parson's white metal, be used for turning bushing for bearings, the same as ordinary red bronze? That is, would it make a suitable bushing for a bearing carrying say a 2-inch shaft, when the walls of the bushing could not be more than ⅛ inch thick? In what way does this material differ from good babbitt?—H. A. Lemmon.

1—If the inquirer is sure the twisted axle really has run 10,000 miles in its present condition, Motor Age certainly advises letting it alone, since it would not be possible to travel this distance without serious trouble developing, as would be the case if the axle were bent as well as twisted. What is meant by the "forcing," to which is attributed the twisting? It is rather extraordinary that the axle should have proved weak enough to twist in the beginning and yet remained strong enough to run 10,000 miles without further twisting. Is not the "twist" some peculiarity of form intentionally produced by the manufacturers? The expediency of attempting to straighten the axle, with or without heating, depends altogether on the quality of the particular piece of steel. If of alloy steel, it would be best to twist and hammer it cold, but great force would be required. With carbon steel, heating not above a cherry red is unobjectionable, and will render the change easy to effect.

2—The reason a two-cycle engine of a given size and design is not twice as powerful as a similar four-cycle engine, is that in the two-cycle, to offset the doubling in the number of working strokes, there is a falling off in the power developed per stroke. This is due to imperfect functioning, and keeps even the best two-cycle engines from being more than one and one-half to one and two-thirds as powerful as similar four-cycle engines.

3—White bronze, if evenly and strongly supported, should give satisfactory results with the proportions mentioned, though Motor Age recommends a greater thickness than the ⅛-inch mentioned, if the design will possibly permit it. The composition of most bearing alloys is a secret of the manufacturer's. In a general way it may be said that most white bronzes contain a proportion of zinc or copper, or both, though not as much as in red bronze. They are midway in strength between brass and babbitt, and are intended to combine a maximum proportion of the endurance of the one with the immunity from seizing of the other.

REPAIRING PLATINUM POINTS

Savannah, Ga.—Editor Motor Age—Can you direct me to a concern that does or will do repairing of platinum points or parts? It would seem there ought to be some concern that does this work, but I have been unable to locate it and perhaps an inquiry in the columns of Motor Age will bring about an answer. It would not alone be a considerable saving to motorists but frequently would facilitate the replacement of a special or out of date screw or vibrator.—M. E. Wilson.

Almost any maker of coils is prepared to do this work and surely the manufacturer of the coil from which the part is taken will do it. As a matter of fact a jeweler should be found who can do the work as well as anybody. Write the maker of any coil found in the advertising columns of Motor Age.

WANTS ACCESSIBILITY

Whitewater, Wis.—Editor Motor Age—The article on "Crankshaft Accessibility" in Motor Age of January 2 was read with much interest. I have wondered many times why so many manufacturers will put engines in cars that some time sooner or later must be taken to pieces or removed entirely from the chassis so that some small part can be repaired or replaced. The way some of them are put together, one would think they were never intended to be taken apart. Such cars go fine until they go wrong; then the fun begins, more especially if the accident happens in the country, where the owner or driver must don his overalls and jacket, force his way under the machine, with his back in the sand or mud, then proceed to remove from ten to sixteen cotter-pinned nuts—with dirt and dust dropping in his eyes—so that the heavy, cumbersome dust pan can be removed. Then he must remove as many more bolts or nuts, so the plate on the under side of the lower half of the crankcase can be removed. All of this must be done before a repair or replacement can be made. During this time the oil is dripping in his face and running down the arms, which is anything but pleasant. It would be folly to build a house with no doors or windows, so that no entrance could be made other than to remove the roof, tear off the side of the house, or go down cellar and tear out the floor. Such a house would be like some of the motors used in some of the well-known automobiles of today. I believe the best way is to have openings on the side of the crankcase so the crankcase and bearings can be looked after more easily. I know of an incident that happened last August that will show that some of the modern cars are not perfect by any means. Several Chicago people were spending their vacation at Delavan lake. They decided one afternoon to make a pleasure trip to Whitewater and return in time for supper. When they were within 3 miles of that place they heard a slight pounding noise in the engine. An investigation was made, but it was decided that the trouble was so slight and that it was so much work to remove the dust pan and a lower portion of the crankcase that they would continue their journey to the city. There the car could be run over a pit in a garage and the trouble located. They had gone but a few rods when the car came to a sudden stop with a bang. An investigation showed that the lower end of one of the connecting rod had made its appearance through the side of the crankcase. The machine was drawn to town, where, after removing the dust pan and lower plate on the crankcase, it was seen the connecting rod was bent, the piston in that cylinder had a large piece broken out, and the cylinder cracked. The cylinders were cast in pairs, so that meant two new cylinders. The upper and lower halves of the crankcase were ruined by the connecting rod breaking a large hole in them. The party returned to Delevan by a livery rig and in a few days the car was shipped to Chicago for repairs. The car was of a well-known make, of 30 horsepower and cost $2,500. If the engine had been equipped with hand holes on the side of the base the trouble could have been located at once and much time and expense saved. Accessibility will be the watch word sooner or later.—W. H. M.

FOREIGN PUBLICATIONS

Bel-Air, Md.—Editor Motor Age—Please furnish me through the columns of the Readers' Clearing House of Motor Age the addresses of the following publications: American Chauffeur, Canadian Motoring and the leading French publications.—Reader.

Canadian Motoring, 1 Wellington street, W., Toronto; l'Auto, le Matin and l'Automobile are the principal French publications and are published in Paris.

MAKERS OF STILLS

Melrose, Cal.—Editor Motor Age—I desire to learn where I can find makers of stills to make industrial alcohol. If you can, will you kindly give me the names of still makers?—Harvey Beckwith.

Write Lillibridge, Weeks, Thurlow Co., 31 Warren street, New York city; Whitall, Tatum & Co., 46 Barclay street, New York; Frank L. Randel & Co., 197 Pearl street, New York.

FROM THE FOUR WINDS

Chauffeurs Select Officers—The Baltimore Chauffeurs' Club held its annual meeting at which the following officers for the ensuing year were elected: President, Albert R. Qualey; first vice-president, Fred Charpait; second vice-president, J. L. Hild; secretary and treasurer, W. D. Wehland. The club was organized in 1905.

Germany's Imports Dwindle—According to a statement prepared by the government bureau of statistics covering the commerce of the United States with Germany during the 5 months period, July to November, the number of motor cars imported from Germany declined from twenty-six, valued at $114,030, during that period in 1906, to eighteen cars, valued at $73,308, during the corresponding period of 1907. On the other hand the exports of cars and parts from the United States to Germany during these periods increased from $54,467 in 1906 to $73,063 in 1907.

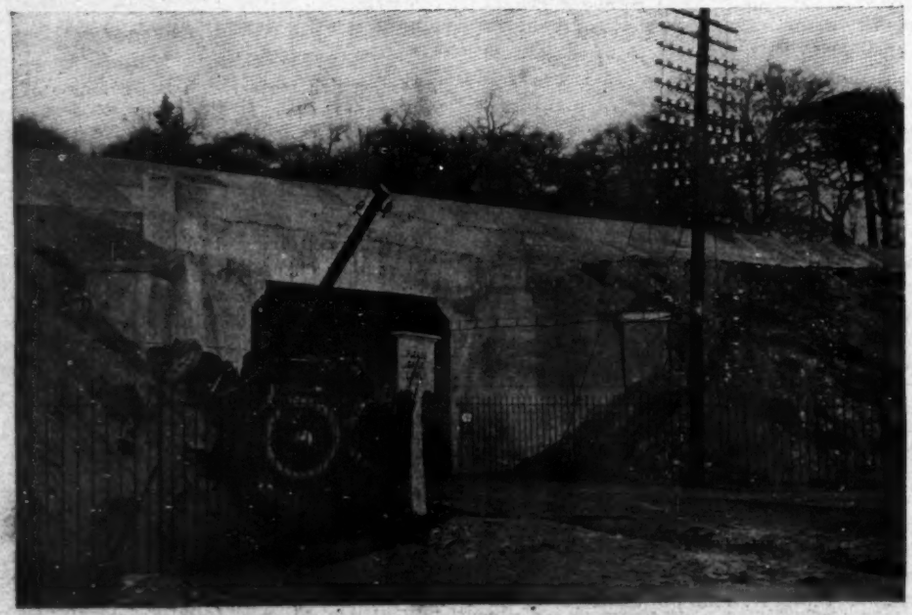
Would Examine Glidden Cars—Indications point to endurance run competition entering this year upon a new and more rational era. It is likely the example of the Chicago and Quaker City motor clubs in examining the perfect score cars, at the conclusion of their tests, to differentiate the performances and evolve a single winner, will be generally followed. James Joyce, general manager of the American Locomotive Automobile Co., goes even further and suggests that this process of elimination be employed in weeding out the survivors of the next contest for the Glidden trophy. "More than one car," says he, "covered the route and survived the time schedule of the tour, whose condition at the finish would not have borne comparison with several cars that completed the run in really as good shape as when they started. It is not fair that such truly successful survivors should have to divide honors with their weak-kneed brothers. A rule that will do away with this will increase public respect for the great annual road test."

Michigan Road Work—The Berrien County Good Roads Association has been formed at Benton Harbor, Mich., for the purpose of improving Berrien county roads, the improvements to be made through the board of supervisors. Henry M. Miller is president and John F. Duncan is secretary and treasurer. A campaign has been begun to secure good roads leading into Kalamazoo, Mich., and a committee of five will be appointed from the Commercial Club of that city to have charge of the matter. It is planned to have prominent motorists of the city meet with the committee some time this month to push matters.

Will Talk Freight Rates—Alfred Reeves, general manager of the A. M. C. M. A., and James S. Marvin, the traffic manager of the licensed association, will attend the western classification committee meeting which is to be held at Hot Springs, Va. The western classification committee, which governs freight rates on all lines west of Chicago, will consider, among other things, the minimum weight to be applied on carload shipments of motor cars and also the minimum weights to be applied on less than carload shipments. The shipment of motor cars has been one of considerable interest to traffic managers of the railroads, and the creation of new classifications and tariff has been a problem which confronted the manufacturers and dealers of cars, but through the efforts of the traffic department of the A. L. A. M. it has been found possible to point out to the railroad officials wherein many of the methods originally adopted could be changed to the benefit of manufacturer and dealer alike.

Franklin Stunt a Success—Just to show that the 172-mile course which proved such a difficult proposition for the contestants in the recent Quaker City Motor Club run was not such a hard nut to crack after all, the Quaker City Automobile Co. sent a 28-horsepower Franklin car over the course on 3 successive days last week without a hitch. To further strengthen the claim that even the hardest kind of going has no terrors for the air-cooler, the engine was kept running continuously for 26 hours after the return from the last day's run before being stopped, the latter test being in the comfortably-heated salesrooms of the company. Observers named by the local papers accompanied the car on each trip, and saw that the schedule was followed by the three tied cars on the run-over was adhered to. The roads were, if anything, worse than on January 1 and 2, but the Franklin made an easy job of it.

Laughlin Chief Pathfinder—Plans are now complete for the Jacksonville-to-Miami, Fla., road test which takes place the second week in March. James Laughlin, III, of Pittsburg, accompanied by Vice-President George E. Sebring, of the Florida East Coast Automobile Association, and Sales Manager Charles G. Percival, of the Cleveland Motor Car Co., have been appointed pathfinders. These three will survey the lay-out of the 360 miles of swamp and everglade lying between the untraveled depths between Jacksonville and Miami. This road never has been completely covered by a motor car, it is claimed. The pathfinders left Jacksonville, Fla., Wednesday in a 45-horsepower car, fully equipped with pick-ax, spade, block and tackle, 18-foot pine skids, rolls of canvas and necessary camp equipage to enable them to cross and live in the hazardous and impassable territory of this part of the state of Florida in which for the next 10 days they will have to exist. For 360 miles they will travel through the most historical part of any section of the United States. The first day's trip was 40 miles to St. Augustine. Leaving the gates of St. Augustine on the second day the Laughlin pathfinders traveled to Ormond, 64 miles away, over the King's highway which was built during the revolutionary war by the troops of King George on their famous march to Georgia. The third, fourth and fifth days will not average over 30 miles each, owing to the



BROOKLANDS TRACK, SHOWING WHERE NAPIER RAN OFF COURSE AND JUMPED 50 FEET

bad condition of the road, getting the pathfinders into Palm Beach with Miami but 65 miles away. The pathfinders will map out, survey, erect signboards on every available tree for the benefit of the contestants.

Pullman Engine Still Going—The engine of the Pullman-4-40 gentleman's roadster, which was entered and driven by Morton in the Philadelphia New Year's run, and which despite its road penalties, due to tire troubles, survived the technical committee's examination without a bad mark, is still running at the garage of the York Motor Car Co., York, Pa. The engine will be kept running as long as possible without any other care than the replenishing of the fuel supply and the lubrication.

Dieppe the Favorite—While the Dieppe course is most favored for this year's grand prix, it by no means settled where the classic will be run. The Bourguignon circuit has come into prominence of late and may give Dieppe a fight. Thery, winner of the last Bennett, and who retired immediately after, has been coaxed out again and probably will drive a Brasier in the grand prix. His teammates will be Baras and Bablot, while Heath and Cissac will be in Panhards. Callois, Szisz and Dimitri will drive Renaults. The only entries definitely made so far are those of three Germain cars. It is said England will be represented by three Weigels and an Ariel.

Another Accident at Brooklands—An accident of an alarming nature which, however, was unattended by serious injury to anyone, put a stop, on January 2, to a record-breaking attempt on the Brooklands track in England. H. C. Tryon was driving a 60-horsepower Napier car belonging to S. F. Edge and attempting to put up new records for 50 and 100 miles and 1 and 2 hours. After completing about 25 miles one of the back tires burst, causing a delay of 1 minute 47 seconds. Proceeding on his journey, Tryon completed 50 miles in 38 minutes, notwithstanding the time previously lost, beating the record for the distance recently established by Clifford Earp in a 60-horsepower Thames car by 1 minute 10 seconds. The car continued on its journey but unfortunately, after a few more laps had been covered, the off rear tire burst. This occurred just as Tryon reached that point of the track where the finishing end of the straight joins the main oval course. There the car twisted completely round several times, pivotting on the damaged tire, part of which had jammed between the wheels and the frame, thus locking the wheel. It continued its waltzing until it reached the bridge over the car entrance to the competitors' enclosure. It then slid down the bank and took a flying leap right across the road, carrying with it a telegraph post and some iron railings. Tryon stuck gamely to the steering wheel and the car turned on its side and threw him clear of the machine on the asphalt. His injuries were thought at first to be serious, but after medical examination it was found he was suffering only from shock and a few bruises. Tryon's escape was miraculous, considering that the speed was something approaching 90 miles per hour.

Guard Dead Man's Curve—Superintendent of Detectives Thomas A. McQuaide, of Pittsburg, has gained for himself the praise of Smoky City motorists by stationing watchmen at Dead Man's curve on Grant boulevard, where several fatal accidents have occurred during the past 2 years. These watchmen will see that no motorist approaching the curve is going at a dangerous rate of speed and also that the boulevard is properly lighted at this point, which is admitted by all to be the most dangerous place for skidding on any of the city boulevards.

Motor Car to Rescue—During the recent floods in Texas the motor car played a prominent part. The Santa Fe railroad lost several bridges and was left without an engine at Pecos, whereupon W. W. Pitts, of the Pecos Automobile Co., visited the general manager of the railroad and offered his aid. Pitts went to work on a four-cylinder double chain drive Acme and converted it into a railroad motor car. He secured a pair of push car wheels and axles and by babbitting each end of a 2-inch pipe and properly bolting it to the axles in place of the regular axles he turned the trick. He fitted eighteen-tooth sprockets by using two pieces of well casing 6 inches in diameter and 10 inches long. He bolted the sprockets to each rear wheel with six bolts through holes in the sprockets and holes drilled through the wheels. This made a rig that was a temporary railroad train and for several days, while the Santa Fe was making temporary repairs, the Acme made two round trips a day, each 200 miles, carrying five and six passengers. The Acme averaged 25 miles an hour and at times reached 40. It was fitted with a Rushmore headlight so it could run at night without any unnecessary risk.

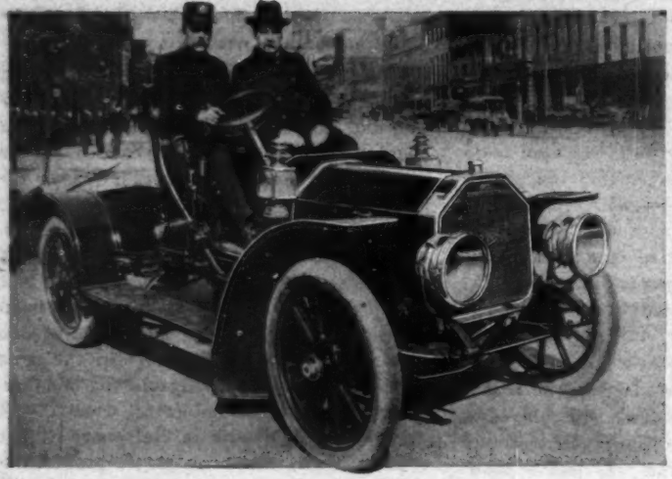
May Drive Bayards—Gabriel is dickering to drive a Bayard this year. Le Blon, who handled a Thomas in the last Vanderbilt, also may be with Bayard. Rigal already has signed with this concern.

Women Can Join—Motoring among women in Baltimore has become so popular that the Automobile Club of Maryland has decided to admit those of the fair sex as members of the club. Another reason for this move on the part of the club is for the purpose of amplifying the social features of the club. For this reason, it is contended, the presence of the women is a real necessity. According to the decision of the club, therefore, not only women motorists but female relatives of the male members will also be eligible for membership. While the number of women who drive their own cars in Baltimore at the present time is not as large, proportionately, as in other cities, the sport is becoming more popular among the fair sex every day.

Ireland Has Good Show—The second annual Dublin show opened Saturday, January 4, and wound up the following Saturday, and those who visited it pronounced it an exhibition of merit and interest. The affair was promoted by the Society of Motor Manufacturers and Traders and the Irish Automobile Club. The lord lieutenant of Ireland, Lord Aberdeen, formally opened the exhibition, which was one-third larger than the first one, necessitating the securing of a minor hall in order to accommodate everyone. There were ninety-six stands, and while some of the manufacturers showed direct, the majority was represented by agents. Nothing new was on view, all the cars and accessories having been seen at Olympia at the recent big show there.

ACME CAR THAT WAS USED AS SUBSTITUTE FOR RAILROAD TRAIN IN TEXAS

The Realm of the Commercial Car



CHIEF BAXTER, OF PHILADELPHIA, WITH PEERLESS CAR

THE MARKLE GASOLECT TRUCK USED IN ARMOUR SERVICE

MIXTE means mixed in the motor field in France and Germany, the particular application being a mixing of gasoline and electricity in the propelling of a motor car. In America we have the mixte car but prefer calling it the gasoline-electric, which could be admirably abbreviated to "gasolect," formed from the two words gasoline and electricity. The pioneer builder of gasolect cars in America was the Electric Vehicle Co., which built and demonstrated last summer a pleasure car operating on this principle. In gasolect cars the gasoline engine is in place and in the rear of it and coupled direct to its crankshaft is an electric generator that furnishes electricity, which is in turn delivered to electric motors that drive the rear wheels of the car. The system comprises three essentials: the gasoline motor as a prime mover, the electric generator that makes the electricity, and the electric motors that propel the wheels. In some gasolect systems a fourth essential is used in the form of a large storage battery, into which the excess electricity, not used by the electric motors, is discharged, and from which it can be drawn when an overload pull is required. The battery is not a favorable essential with many makers because batteries are variable quantities on heavy trucks; they are heavy and often short lived. Of late not a few makers have experimented with a kind of automatic control between the electric generator and the electric motors, so there is a balance existing between them whereby there is no surplus current produced by the generator and yet enough power for any overload that is met with.

One of the latest of these automatic controls is known as the Markle system of Chicago, in which the inventor, John H. Markle, uses but three essentials: gasoline engine, electric generator and electric motors on the back road wheels. A company has not as yet been incorporated to manufacture the Markle system for commercial trucks or pleasure cars; rather the intention is to sell the patent rights or manufacturing privileges on a royalty basis. To demonstrate the ability of the Markle system it has been installed in a large 5-ton electric truck used by Armour & Co., Chicago. The original electric truck had an underslung battery and a double motor system, one motor geared to each rear wheel. In installing the Markle electric system the battery with its carrying platform was taken out and a dropped subframe substituted, this subframe extending practically from the front to the back axle and about as low as the axle. On this subframe are carried the gasoline motor in front and the generator in the rear of it, the latter coupled direct to the rear end of the gasoline engine crankshaft. The two electric motors used on the rear wheels were not altered in the least. The electric wires from the generator were run to the controller under the seat with connection to a starting rheostat on the side of the vehicle cover at the left end of the seat, as well as to a voltmeter above the rheostat. This comprised the sum total of the changes. The running gear, steering mechanisms and other parts were not molested. With the new gasolect system as used on the Markle the control is confined to controlling the speed of the gasoline engine by the throttle and spark, although Mr. Markle states a governor will be placed on it and thereafter the driver's attentions will be limited to the controller handle in the left of the seat, the starting rheostat and steering the machine. The driver is cautioned to keep the voltmeter showing approximately a voltage of 110, although when quickening speed or taking heavy grades it often is necessary to let it go higher and at times a maximum of 150 volts is reached. On grades the driver also speeds the gasoline engine, which with normal work operates at a crankshaft speed of 600 revolutions per minute. The chief features of the Markle gasolect system lies in the construction of the electric generator, as well as the balancing between it and the electric motors whereby a battery is eliminated, yet sufficient power obtained for overload times.

INDIANAPOLIS GETS PATROL

The Indianapolis department of public safety recently made a test of a Rapid commercial car and the results fully justify its intention of purchasing three to be used regularly in their police patrol service. In 2 days, from August 17 to noon August 19, fifty-one runs were made. The average run—round trip—was twenty-nine blocks, and the average time consumed in making the entire trip was 11.5 minutes. The time required to get under way after calls were received averaged 8 seconds. It must be remembered that this time includes starting the dead engine, loading of prisoner—in some cases three of them—and telephoning to headquarters. Another feature of the car's performance was the economy of fuel consumption. A total of 185 miles was covered on 12 gallons of gasoline, or 15½ miles to the gallon. This amounts to 1 4/37 cents per mile for fuel. The gasoline was personally measured by the officials, as they were particularly interested in the comparative cost between the motor and the horse. As the car did the work of three patrol wagons, nine horses, three drivers and six patrolmen, the net saving amounts to several hundred dollars yearly.

REPLACES EIGHT HORSES

A very good illustration of how the motor trucks are gradually destined to usurp the functions of the horse is shown by the figures from F. D. Graves, of North

Scituate, Mass. Last March he purchased a Rapid truck. He has run it practically every day since, some days the truck going more than 100 miles. It averaged about 75 miles every day, and the total cost for repairs in that time was $60. For maintenance it cost an average of $2 a day. The truck took the place of eight horses and the cost of keeping the animals would have been several times that sum. Mr. Graves does a trucking business and he is going to get more trucks and give up the delivery of goods with horses altogether.

COMMERCIALETTES

The C. Reiss Coal Co., Sheboygan, Wis., has purchased a Couple-Gear electric truck for its city delivery work.

Milwaukee's postmaster states that his motor car mail service has already been thoroughly tested out for winter service and there is no longer any doubt as to its feasibility. The mail service in the city has shown improvement throughout the entire winter and whereas arrivals and departures from the main office were on time 85 per cent of the times during the summer, they have improved and are now up to 95 per cent.

The Illinois Central is using a gasoline motor car on its line between Freeport, Ill., and Madison, Wis. The car is rented from the Union Pacific, carries seventy-five people and makes fast time. The company claims it is excellently suited for branch lines on which the traffic is too light to warrant the running of steam trains.

PHILLY'S POLICE PATROL

"This is the twentieth century way of fighting fires," said John C. Baxter, chief of the Philadelphia fire department, after having made a long run in the new Peerless car purchased for his use by the Quaker City fathers. Continuing, Chief Baxter said: "The city should have purchased motor cars for the police department long ago, for long runs are very hard on horses. I now press a button, a bell rings, and before I can get downstairs my steed is ready to carry me to Cramp's shipyard in 15 minutes, to Point Breeze in 10, or to the western limits of the city in 12 or so. My axe, helmet and trumpet are already tucked into the car itself, with a patent chemical fire extinguisher thrown in for good measure. If by some chance I stumble on a fire or reach one early I will not be helpless." It is expected that in time all of the fire marshals and the district engineers will be provided with motor cars, although this will not come in the course of a year or two. At present Henry Clay, director of public safety, and Chief Baxter are the only two motorized officials. Chief Baxter's car is a 30-horsepower Peerless roadster, having a special body of stronger construction than regularly used on the roadster. The car is capable of a reputed speed of 75 miles per hour when pushed.

Both the fire chief and his assistant of the Hartford fire department use Ford runabouts in their work.

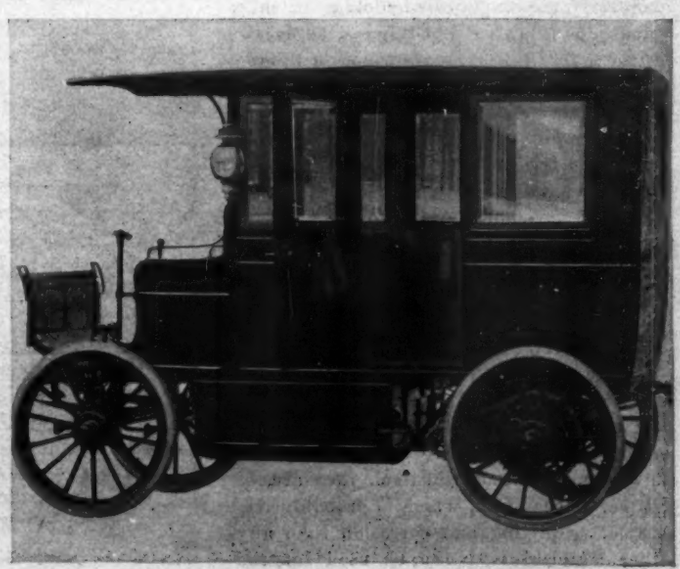
HAULS GOLD AND SILVER

The National Bank of Commerce of St. Louis, Mo., has recently put into operation an electric bank wagon which was built by the Studebaker Automobile Co., South Bend. The chassis of the wagon is a regular Studebaker electric chassis of 1500-pound capacity. The body was built upon the bank's specifications. A door opens on each side in the center. Just in the rear of the driver's seat and extending under it, and wholly inside of the body, is located a strong box made of wood and lined with heavy sheet steel. This is divided into five compartments and fitted with a strong lock. Inside the body in the rear, extending across its full width, is located a seat for the person in charge of the wagon and the officer or guard. The inside dimensions of the body are: Length, 6 feet 8¾ inches; width, 40½ inches; height, 57 inches. The wagon is used for carrying money between the bank and subtreasury and also between the offices of various express companies. When a customer wishes to pay off in currency, the money is carried to his place of business in this wagon under the protection of a guard. There are times when the wagon transports over 9,000 pounds of money between different parts of the city in one day's time. With a 1,000-pound load the wagon has a radius of 40 miles and a speed of 12 miles per hour. Since its installation it has not been out of commission for 5 minutes.

MOTORIZED HOUSE CLEANER

Who, interested in motor cars, has not on many occasions wondered why the portable vacuum house cleaners that stand by the sidewalks and do their work through a 1-inch rubber hose extending through one of the fifth or sixth story windows have not used the power of the gasoline motor to propel the vehicle along the street from place to place instead of having to go after a team of horses and draw it to the job, then take the horses back to some livery barn until needed, when they are brought out once again. At last the manufacturers of these vacuum cleaners, one of them at least, have got into line with motor car builders and use the gasoline engine to propel the machine, as well as operate the air cleaning portion of them. One of these cleaners is being put on the market by its manufacturers, the Vacuum and Compressor Co., Toledo, O., maker of T. & W. stationary and portable vacuum and compressed air house-cleaning plants. This company was one of the first to manufacture a horse-drawn vacuum and compressed air house-cleaning outfit, and its new self-propelled machine is but the natural result of progress. The mechanism which produces the compressed air and operates the vacuum, together with the engine which propells the car and operates the producing plant, is mounted on a chassis of latest motor car designs.

RAPID POLICE PATROL USED IN INDIANAPOLIS



STUDEBAKER ELECTRIC BANK WAGON WITH STRONG BOX

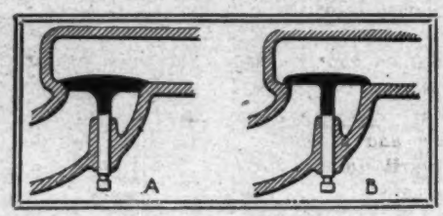
MOTOR CAR SHOP KINKS

CEMENT TO REPAIR RADIATORS

A honeycomb radiator of the usual type, built up from an enormous number of small tubes, expanded at the ends or separated by wires and soldered together, is notoriously difficult to repair with facilities less complete than those employed for the original assembling. Any attempt to solder, even with most skilled workmanship, has an unpleasant tendency simply to extend the area of leakage, the heat of the iron melting the solder in the neighborhood of the break as well as that it is sought to apply—a result that more than one motorist and repairman has encountered to his sorrow. On this account it is practically impossible to effect a satisfactory emergency repair of such a radiator with solder, and recourse must be had to some other method. Such a method is found in the use of a good quality of hydraulic cement, with which the interstices of the radiator surrounding the leak are completely filled. This will most effectively stop the loss of water, and, unless the leaky area is very extensive, will not cut down the radiating surface to an appreciable extent. The repair will also last indefinitely, though the critical mechanic will be disposed to substitute soldering for it the first time facilities are available. This is because the cement method of repairing, if applied and then supplemented by others of the same type, would eventually cut down the working area of the radiator too much for serviceability, especially in the case of a car, in the design of which a nice balance is struck between the radiating area and the engine's requirements as to cooling effects.

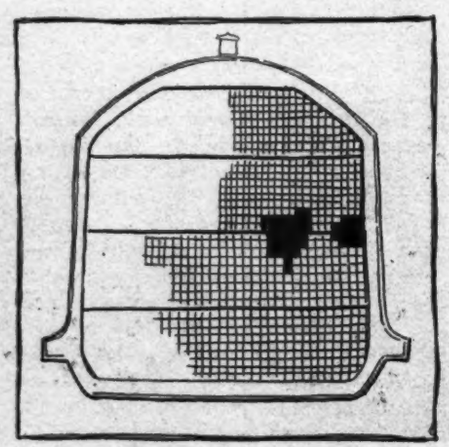
VALVES AND VALVE GRINDINGS

Notwithstanding all that has been written upon the subject, comparatively few motorists are capable of doing a really good job of valve grinding. This is because their theoretical information usually consists of a few mere generalizations, while their practical familiarity with this sort of a job is so infrequent, if it exists at all, as to give little of the knowledge that may come from experience. The poppet valves, which are used to the practical exclusion of all other types in automobile engines, are of the two principal types sketched herewith, that at A being a miter-seated valve and that at B a flat-seated valve. The material of valves and valve seats also differs, carbon steel, nickel steel and cast iron being used, according to the preferences of the manufacturer. When the valve seats are formed in the cylinder material itself they are, of course, of cast iron, which is probably less subject to pitting and corrosion than any other material that can be used for the gas-checking surfaces. The use of valve



VALVES AND VALVE GRINDING

cages, in which the valves are held and the seats formed, facilitates removal, and, consequently, grinding, and permits the use of any of the three materials. Valves turned out of one piece of material are preferred by most designers, because of the danger of separation that always is present with built-up constructions. In this case they may be made of carbon steel, which gives a stem capable of standing much wear, but a head subject to pitting; or if nickel steel, with about 25 per cent nickel, by which pitting and corrosion are avoided, but the likelihood of stem wear increased. Possibly the best valve of all is made with a nickel-steel head, electrically welded to a carbon steel stem. Valves with cast iron heads are made by threading or riveting the carbon-steel stem into the head, afterward brazing the two together for added security. This construction is objected to by many because of the danger of separation and because the brittle head is likely to crack if a particle of carbon gets on one side of the seat, but it cannot be injured by heat, stays tight, and in several cars of high reputation is proving most reliable. In fitting a new valve, though the contact surfaces of valve and seat may have been accurately faced off in a lathe, this is not sufficient to make a joint that will prove gas-tight under pressure. To insure this, valve and seat must be ground together by back-and-forth partial rotation, with a fine abrasive between the two surfaces. The same process must be gone through with old valves whenever, through warping, corrosion or wear, they become leaky. The most effective abrasives for the purpose are the hardest, but they must be used only in the form of the very finest powders obtainable, especially towards the conclusion of the work, or the requisite polish will not be secured and minute ridges will be scored circumferentially on the ground surfaces, preventing their complete and close contact. Inlet valves require grinding much less frequently than exhaust valves, because no hot gases are discharged over their seating surfaces, unless they are prevented from closing by particles of carbon. In starting to grind a valve the abrasive should be applied in very small quantity to the surfaces, mixed into a paste with oil or water—water is the better if there is time to dry it out thoroughly afterward. Then the valve is to be rotated back and forth, though from one-eighth to one-half a revolution, under just enough pressure to make the abrasive cut. Either a screwdriver, applied to a slot cut in the valve head, or a special valve spanner catching in holes in the head, is used. Better still is a valve-grinding machine, made to give the rapid oscillation required by easy turning of a handle in one direction. As the surfaces improve in condition and the abrasive breaks up finer and finer, greater pressure may be used, and the arc of rotation may be increased. Throughout the process the valve must be lifted and reseated every few seconds as a precaution against scoring, and it is desirable to finish the work with a single application of abrasive, so that it will grind finer as the work progresses. By closely observing the precaution of frequently lifting the valve, and by starting with very light pressure and a very small arc of rotation a valve can be perfectly ground without scoring, with much coarser abrasive than should be used. When the work is done all trace of the abrasive must be removed, so that they cannot subsequently wear valves and cylinders. The danger of such wear is what leads many to prefer powdered glass, grindstone dust and similar abrasives of less marked cutting qualities than emery and carborundum, which do the quickest work. If the grinding is done without taking off the cylinders, a bunch of waste stuffed into the valve chambers will simplify subsequent cleaning.



CEMENT TO REPAIR RADIATORS

CARE OF DISK CLUTCHES

The plates in some multiple-disk clutches have a tendency to hang together in cold weather because of congealed oil. By mixing the lubricating oil used with kerosene, in about equal parts, or even with the kerosene predominating, much of the trouble will be eliminated. Disk clutches, too, need frequent cleaning, first with kerosene and then with gasoline.

LEGAL LIGHTS AND SIDE LIGHTS

WORK OF LEGISLATORS

The Massachusetts legislature is going to have its hands full wrestling with the bills that will come before it regarding motor cars at the present session. Already there are a score of measures filed, with more to follow. The Safe Roads Association has put in a number. One of them asks to have four constables appointed to act as motor car inspectors to enforce the state laws. In another the highway commission is to be empowered to suspend all licenses of persons concerned in accidents pending the decision of the courts, so when an appeal is taken the driver may not operate a car. For incompetency the commission is to be asked to suspend a license when petitioned by persons who have watched the driver. A bill also has been introduced making it a punishable offense to leave a machine standing after dark anywhere without some sort of a light to indicate its presence. A measure has been introduced making the limit of foreign cars in the state without a license 10 days instead of 7. There also has been put in a petition that no one under 18 years of age be given a license to drive a car no matter how proficient. The representative from Nantucket comes to the front to carry on the war against motor cars on his little island. He has asked that the laws be so amended that the selectmen there may pass ordinances excluding vehicles from any road in the island without having the highway commission pass upon the case as at present. As that would be special legislation it will probably not pass.

SOFT FOR TRANSGRESSOR

Dr. Henry T. Bray, who resides 10 miles from the gold dome of the state capitol at Hartford, owns a motor car and, like all medics, he finds it mighty handy in his practice. He was, however, deprived of the use of it a few days ago. The car is kept at the Central Automobile station in New Britain. Joseph Murphy conceived the idea of having a little joy ride at the doctor's expense, and as he had been employed at the garage as a night man no one seemed inclined to stop him. He found spinning over the snow so fascinating he forgot his intention to return in an hour and kept headed north until he reached Thompsonville, where he experienced tangible evidences that the way of the transgressor is hard. The car broke down and he was unable to repair it immediately. He called the doctor up on the telephone, but the latter was out, so he talked with the doctor's wife, and remarked he had the car. Of course the doctor would not mind. It so happened the doctor called up the garage Sunday morning and asked to have his car sent over to him. He was much amazed when he was informed that he had it himself. To make a long tale short, it developed Murphy had the machine, and he was arrested in this city. Judge Meeskill of the New Britain police court fined Murphy $25 and suspended judgment. Had the culprit stolen a horse he would have gone to prison on the banks of the Connecticut for 2 years at least, it is figured.

JUSTICE IN A NET

The suit of Frank H. Young, a Philadelphia motorist, against Squire Joseph Keen, of Hulmeville, for illegal overcharges growing out of an arrest for alleged excessive speed, will be remembered. There was a charge of $1 for serving a warrant on Young. The latter, however, has appeared voluntarily, and it was not necessary to issue a warrant for him. It is, it is claimed, the usual custom, however, always to include this sum in the bill, and Young was the first one to kick. His lawyer discovered there is a penalty of $50 provided for this offense, payable to the person so overcharged. If the squire fails to pay up on or before January 2—the law gives him 30 days' grace—suit will be brought for the amount, it is stated. The case against him is so sure that Keen will surely pay up and avoid the additional charges should the case be allowed to go to court, it is asserted. The squire avers that if he is compelled to pay he will recover from the borough of Hulmeville, whose orders he followed in pushing the cases against the motorists so vigorously. It is on record that fully a score of others have also paid $100 for warrant service which was never performed. Some of them are consulting lawyers, who seem only too anxious to take hold of what looks so much like a sure thing.

IN A QUEER PREDICAMENT

Justice Carver, of Elwood, N. J., had a funny one pulled off on him last week. His town is a small one, and lacks several municipal comforts, among them a jail. He received permission from the railroad authorities to use a box car on the siding as a temporary lock-up whenever occasion required. On the day in question one of the two occupants of a car bound Philadelphiaward that was going too fast was detained until the fine money could be forwarded. Temporarily the culprit was locked in the car and the justice went to lunch. Meanwhile a freight train backed onto the siding, the jail car was attached and 2 hours later the prisoner was in Camden, where his poundings on the car door soon procured his release. The justice reached his office just in time to receive a telegram of thanks from the lucky culprit. Now he has asked the borough to provide a stationary jail for the future.

JAIL FOR THE MOTORIST

Three months in jail and a fine of $1,000 was the penalty imposed upon George Meserve Weatherbee, a Boston dealer, for killing Warren M. Batchelder in Cambridge last July. It is the first time a jail sentence has been given in the Hub courts for such a case. Weatherbee has a place of business on Berkeley street, where he sold and exchanged cars. On the night of July 6 he was driving home through Cambridge, when his car struck Mr. Batchelder and knocked him down. The latter was just stepping off an electric car. Mr. Weatherbee continued on without waiting to see how the man fared. It was late and not many people saw the accident. Curiously enough, Mr. Batchelder's brother was in the motor car business and he had a wide acquaintance among the trade. When he learned of his brother's injuries he hastened to his side, but the injured man was unconscious and no information could be gleaned from him. He died shortly after the accident. So his brother set to work, and with the aid of the police they succeeded in tracing the car to Waltham, where Weatherbee lived, and soon they had evidence enough to cause an arrest and a warrant was taken out. The case was put over until the September term of the court, when Mr. Weatherbee pleaded guilty to manslaughter. Sentence was deferred because his wife was ill. When he came up for sentence a few days ago his attorney asked for a fine rather than a jail sentence. But the district attorney recommended a sentence of 3 months and a fine of $1,000. Judge Hardy, who presided at the case, said the request of the district attorney was moderate in view of the actions of the defendant in not making any pretense to stop and see how the man fared that he had struck. It is believed that if Weatherbee had stopped and shown some solicitude for the unfortunate man the case would not have been pushed so vigorously.

DRAFT NEW YORK BILL

Oliver A. Quayle, Charles Thaddeus Terry and W. W. Niles, a special committee of the New York State Automobile Association, has completed its task of preparing a uniform motor bill for presentation to the legislature. It will provide for an annual registration fee based on the weight, size and class of cars, the fees being $2, $3, $4 and $5 a year, respectively, for runabouts and small, medium and high-power touring cars. "Motorists want good roads," says President Quayle of the state association, "and will not haggle over the payment of small fees to help in securing them." The New Yorkers are aroused over this proposition and every effort will be made to have the bill put through.

AMONG THE MAKERS AND DEALERS

Will Import Business Rigs—The C. G. V. Import Co., of New York, announces it will hereafter also import commercial vehicles of this make.

Adds the Jackson—The New York agency of the Jackson has been placed with the George J. Scott Motor Co., which also handles the Glide line.

Takes the Renault—Prescott Adamson, Philadelphia representative of the Columbia gasoline and electric cars and the General Vehicle Co.'s commercial vehicles, has just secured the agency for the Renault for eastern Pennsylvania.

Young With Stepney—William B. Young, a Chicago tradesman of bicycle days gone by, of recent years engaged in New York in various phases of the motor industry, is to return to his former home, having accepted a position on the selling staff of the Stepney Spare Wheel Co.

Ready for Business—The alterations which have been in progress at the Philadelphia quarters of the Studebaker, at 326-328 North Broad street, have been completed and the branch house has been thrown open to the public. A. J. King is in charge, with Frank Yerger as his assistant.

Forms Wind Shield Company—R. J. Irvin, who recently resigned as president of the Capital Auto Co., Indianapolis, has organized the Irvin Mfg. Co. The company, which will manufacture wind shields and motor accessories, has found headquarters in the Laycock Industrial building in that city.

Sells Cars in Redlands—Lee Richardson, famous in the cycling days as a trick rider, is the head of the Lee Richardson Automobile Co., at Redlands, Cal., where he is handling the Earl for the southern portion of California. He also is in the market for other lines of cars. Richardson handles the Harley Davidson motor cycle.

Cafe for Chauffeurs—A feature of the new garage of the Keystone Motor Car Co., of Philadelphia, which is one of the most complete in that city, is the chauffeurs' quarters attached, where the drivers are provided with all the conveniences of a club, including cafe, billiard and pool tables, card tables, cigar stand, books and magazines, etc. Employers and men are enthusiastic over the innovation.

Buick Branch Opened—A branch of the Buick Motor Co. has been opened in Indianapolis at 415-417 Massachusetts avenue and R. H. Losey has been placed in charge as manager. The branch will be known as the Buick-Losey Co. and will occupy the building occupied last year by the Boyd Automobile Co., which had the Indiana agencies for the Buick, Stevens-Duryea and Orient Waltham. The Indianapolis Sightseeing Co., operating sightseeing vehicles, also makes its headquarters in the building.

Arbogast Resigns—E. W. Arbogast has resigned his position as sales manager of the Tincher Motor Car Co., of South Bend, Ind., to take effect March 15.

Massenat in Mexico—Andre Massenat, manager of the American branch of Panhard & Levassor, is visiting Mexico, Cuba and the West Indies in the interests of the concern he represents.

Newspaper Man in Trade—E. R. Thompson, a newspaper man, has entered the trade proper as sales manager for Greater New York for the Hicks Speed Indicator Co., of Brooklyn.

Meyer Makes a Change—H. W. Meyer has severed his connection with the W. H. Kiblinger Co. and is now connected with the Zimmerman Mfg. Co., of Auburn, Ind., in charge of sales in their motor department.

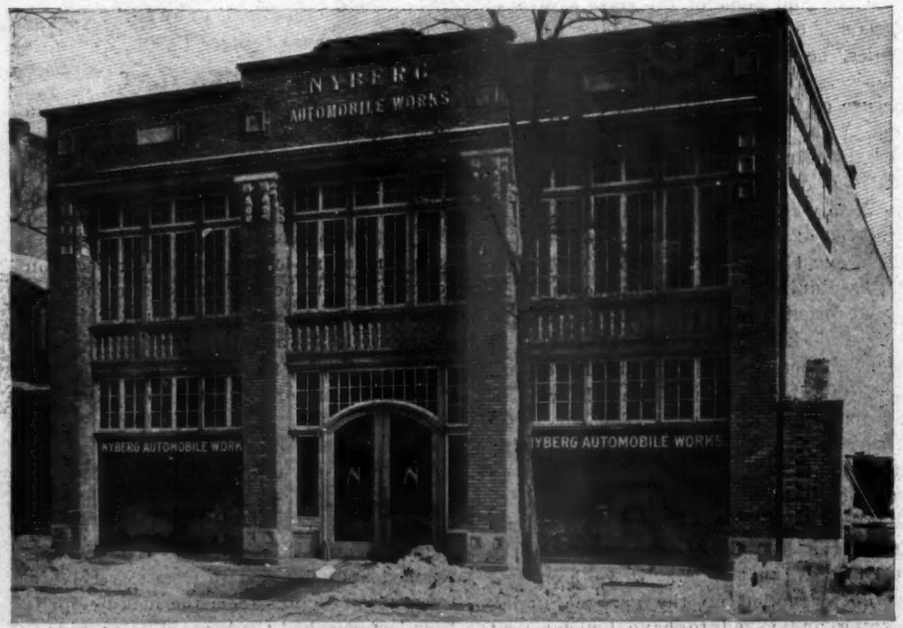
Calls Creditors' Meeting—A meeting of the creditors of the St. Louis Motor Car Co. has been called for January 28 at 10 a. m. in the United States court room at Peoria, Ill., to consider a proposition to be laid down by Jesse French, Sr., and his wife, Callie L. French. These two wish to withdraw their claim of $61,287.21 if they are allowed to have a certain motor car which was in the factory at the time the company was thrown into bankruptcy, and also if the balance they owe on unpaid stock subscriptions is stricken off. J. M. Sholl, the trustee, believes it would be for the benefit of all the creditors to accept the French proposition, and has secured the consent of the referee, E. S. Robinson, of Springfield, to call the meeting of the creditors.

Have Fine Location—Jacobs & Bartlett, who have taken the agency for the Allen-Kingston cars in Boston, have opened up fine quarters on Boyleston street right in the heart of the row.

Fiske Adds the Peerless—Leonard D. Fiske, Hartford, Conn., representative of the Corbin, has taken on the agency of the Peerless, which has not been represented in that city for some time.

Rheims in Wine Business—Gaston Rheims has severed his connection with the C. G. V. Import Co., of New York, of which he was manager, to join with George Kessler in the exploitation of a foreign brand of champagne in this country, it is announced.

Stearns Doing Well—Since the arrangement with the F. B. Stearns Co., whereby Wyckoff, Church & Partridge, of New York, have the handling of all Stearns cars in the eastern states, new agencies have been quietly opened in several large cities. The most recent contracts have been made in Brooklyn and Boston. The name of the new Brooklyn agency is the Allen-Swan Co., which has opened a place for the sale of Stearns cars at 1287-1291 Bedford avenue. Lew H. Allen is president of the new company, and Halstead Swan is secretary and treasurer. E. S. Partridge has just concluded arrangements for the representation of Stearns in Boston. A contract has just been signed with Morgan B. Kent which gives him the ex-



NYBERG AUTOMOBILE WORKS, CHICAGO, WHICH DEAL ONLY IN SECOND HAND MOTOR CARS

clusive Stearns agency for the state of Massachusetts. Agencies also have been opened in Rochester, Philadelphia and Baltimore.

New Northern Agent—Among agencies recently closed by the Northern Motor Car Co. for 1908 is the Lincoln Auto Co., of Lincoln, Neb.

Invades Mexico—J. B. Bartholomew, president of the Bartholomew Co., has gone on an extended trip to Mexico. He will visit the leading cities there with the idea of placing several agencies for Glide cars. About this time in 1907 Mr. Bartholomew made an extended trip to Brazil and the republic of Argentina.

Philadelphia Transfer—On Thursday last Louis J. Bergdoll transferred to the Bergdoll Motor Car Co. the big new three-story garage and salesrooms at 323-327 North Broad street, 35.7 by 120 feet, for a nominal consideration. The property as it stands is assessed for $70,000.

Tire Agency Moves—The G & J Tire Agency, of 711 North Broad street, Philadelphia, has secured new quarters at 713 North Broad street and will take possession February 1. This is a corner building across the street and fully again as large as the place the agency now occupies. In securing these quarters it now has the largest tire store in Philadelphia, it is claimed.

Ordered to Pay Selden—Judge Ralph Wheeler, of the superior court of the county of Hartford, has instructed the receiver of the Electric Vehicle Co., of Hartford, Conn., to pay to George B. Selden, of Rochester, N. Y., the moneys which became due to him from time to time, likewise to pay to the Association of Licensed Automobile Manufacturers the moneys which have become due from time to time and to appoint a member of the executive committee of the association to deliver sub-license and to institute actions at law under the Selden patent. The receiver also is authorized to receive and disperse all royalties and license fees received from various sub-license agreements under the Selden patent.

New Jewel Agents—The Forest City Motor Car Co. has established the following agencies for the sale of Jewel cars: F. A. Faller, Wilmerding, Pa.; Broad Street Garage Co., Bethlehem, Pa.; Brodess & Co., Decatur, Ill.; C. E. Albright, Akron, O.; D. W. Goble, Monon, Ind.; Ray Wortham Co., Fort Worth, Tex.

Stratton Joins Studebaker—In line with its policy of expansion, the Studebaker Automobile Co.'s New York branch at Broadway and Forty-eighth street, has secured the services of E. V. Stratton, who for the past year has served as manager of the New York Automobile Trade Association. Mr. Stratton will be associated with C. F. Redden in the marketing, both wholesale and retail, of Studebaker cars.

Sells Cars by Mail—Claim is made by the Nyberg Automobile Works, 2437-39 Michigan avenue, Chicago, that they do the largest mail-order business in motor cars than any other concern in the country. Henry Nyberg himself is a veteran in the business, having been selling second-hand cars for 7 years. The mail-order business has been developed in the last 2 years and last season Mr. Nyberg disposed of nearly 400 cars. He picks out good machines, buys them outright, has them thoroughly overhauled in his well-equipped shop and then sells them. His business in Chicago alone is a large one, he asserts, but by means of the mails he has sold cars as far west as California, as far east as New York and as far south as Mexico. His establishment occupies two floors and a basement, 50 by 155 feet, and he has 20,000 square feet at his disposal. Upstairs he has his machine shop and body-painting department. A car goes through a careful inspection, is pulled down and if any repairs are needed or replacements are necessary they are made and the car put on the floor for sale in tiptop condition under Mr. Nyberg's own guaranty.

ESTABLISHMENT OF LEE RICHARDSON AUTOMOBILE CO. AT REDLANDS, CAL.

Hoosier Business—According to figures from the records in the office of the Indiana secretary of state, motor cars are selling at the rate of about four a day in the state. This is a good record, considering the financial conditions in Hoosierdom. Since the new motor law went into effect in Indiana 5,156 cars have been registered with the secretary of state.

Pelletier Goes Abroad—E. LeRoy Pelletier, former advertising manager for the Ford Motor Co., has gone abroad with his wife for a 6 weeks' vacation. While on the other side he will look into the motor industry in France and Italy, returning about February 25 to take up with his new advertising agency, plans for which he perfected before leaving New York.

Rochester Dealers Organize—Motor car dealers in Rochester, N. Y., have formed the Automobile Dealers' Association. The officers elected are: Chairman, William C. Barry, Jr.; vice-chairman, George Bauer; secretary, A. M. Zimbrich; treasurer, T. J. Northway. A committee will be appointed to co-operate with Secretary Van Tuyle, of the Rochester Automobile Club, to make the motor car show to be held in that city in March a great success.

Jersey Show Plans—Special nights are scheduled for the show which is to be run at the Electric park, Newark, N. J., February 21-29, jointly by the New Jersey Automobile and Motor Club and the New Jersey Automobile Trade Association, with H. A. Bennett, secretary of the former, as manager. The mayor will open the show and nights for the attendance of the governor and former governors and of the members of the A. A. C. of N. J.

Trade Election—At the annual meeting of the Peerless Motor Co., of Lansing, Mich., the following board of directors was elected: Fred Thoman, John Toolan, Robert Langenbacher. The officers are as follows: President, Lawrence Price; vice-president, Jacob Gansley; treasurer, L. L. Sattler; secretary and manager, A. S. Bennett. The company has completed the addition to the old plant which will double its capacity and had a successful year in 1907.

Will Handle Only Olds—The Capital Auto Co., Indianapolis, which last year handled the Wayne, Jackson, Overland and Reo in Indiana, has decided to devote its entire attention during 1908 to the Oldsmobile, which has been handled in the past by the Indiana Automobile Co. This year the Overland will be handled in Indiana by the H. T. Hearsey Vehicle Co., but it is understood agencies have not yet been placed for the other lines handled last year by the Capital Auto Co.

BRIEF BUSINESS ANNOUNCEMENTS

Omaha, Neb.—Guy L. Smith is to represent the Franklin in the future.

Hastings, N. Y.—O'Toole & Smith have moved into their new garage on Cedar street.

Newark, N. J.—The New Jersey Motor Co. has closed its garage at 49-51 Bank street.

Poughkeepsie, N. Y.—John Van Benschoten has been appointed local agent for the Lozier.

Newark, N. J.—The Hoffman Mfg. Co., maker of windshields, has removed to 290 Halsey street.

Brooklyn, N. Y.—A new garage has been opened at 912 Bedford avenue, under the management of Ellenbeck & Muller.

Albany, N. Y.—The Sammis & Downer Co., of Huntington, L. I., has been incorporated with a capital stock of $15,000, and will deal in motor cars.

Philadelphia, Pa.—G. C. Lindoerfer, formerly connected with the sales department of the Logan Construction Co., has severed his relations with that concern.

Worcester, Mass.—The Maxwell company has opened an agency at 84 Mechanic street. It will be under the management of Melvin E. Dixon as local representative, and under the supervision of the Boston office.

Columbus, O.—The Midgley Mfg. Co. held its annual meeting and elected Richard Ward as secretary in place of U. Hardy, the other officials being reëlected. The plant is now closed for the annual inventory, and will be reopened in the near future.

Utica, N. Y.—Henry H. Mundy, who was formerly connected with the Utica Motor Car Co., is going into business on his own account. He has taken an office in the City Bank building, and will soon open a supply store. He has taken the agency for the Oldsmobile.

Dover, Del.—The National Machinery Co. has been incorporated with a capital stock of $500,000, and will engage in the manufacture, purchase, sale and improvement of all kinds of tools, implements, motors and machinery. The headquarters of the concern will be in Wilmington.

Cleveland, O.—The Ford Motor Co. has appointed the Wentworth Motor Car Co., of Euclid avenue and Mayfield road, its agent for the east end. This will have no effect on the branch agency now maintained in this city, but is merely the outcome of a new policy recently decided on by the company. In the future the concern will not confine its representation to the branch representing the parent company in each city, but will establish separate agencies in the same cities, each with the same selling powers as the regular branches.

Red Bank, N. J.—J. Mount has been appointed local agent for the Franklin.

Harrisburg, Pa.—B. F. Blough, of the Harrisburg Automobile Co., has secured the agency for the Stearns.

Champaign, Ill.—The Champaign Motor Co. has removed from Taylor street to its new building on West Hill street.

Newark, N. J.—The Star Motor Car Co., of 226 Halsey street, has made arrangements to start a taxicab business.

Pueblo, Col.—Work has been started on the erection of the new garage of the Shull & Bronson Co. in Garden City.

Philadelphia, Pa.—Harry H. Davis has opened a new garage on Croskey street, near Columbia, which is to be known as the Columbia garage. Mr. Davis plays on the Philadelphia baseball team.

Boston, Mass.—A. H. Dorsey, formerly connected with the Peerless company and the Harry Fosdick company in this city, has joined the forces of the Thomas company, of Buffalo.

Wausau, Wis.—Charles Junkermann, proprietor of the Wausau Garage at 113 Forest street, has been appointed district agent for the Stoddard-Dayton Automobile by the McDuffee Automobile Co., of Milwaukee, northwestern agents. G. F. Discher, manager of the Milwaukee company, will do gospel work in Mr. Junkermann's territory during the next few weeks.

New York—Automobile League of New York city, capital stock $5,000; to engage in the manufacture of motor vehicles of all kinds. Incorporators, Frank J. Griffin, Nicholas Fancher and W. T. Conville.

New York—Continental Automobile Co., capital stock $5,000. Incorporators, Henry Best, Walter E. Godfrey and George W. Hess, all of 60 Wall street, New York city.

Buffalo, N. Y.—Buffalo Ignition Co., capital stock $5,000; to engage in the manufacture of motor car supplies and specialties. Incorporators, J. H. Burns, J. A. Mulhall and J. W. Churchill, all of Buffalo.

New York—Adams Repair Co. of New York city, capital stock $10,000, to engage in the manufacture and repairing of motor cars. Incorporators, C. W. Adams, C. A. Post and Robert P. Kernan.

Auburn, Ind.—McDowell Mfg. Co., capital stock $80,000, to manufacture motor vehicles. Incorporators, Willis and Wheeler McDowell and Alverow McDowell.

New York—Imperial Auto Co., capital stock $5,000, to operate and deal in motor cars. Incorporators, A. Wilk, William Rogers and Charles Rubens.

Newark, N. J.—New Jersey Automobile Exhibition Co., capital stock $5,000, to engage in the promotion of motor car shows, exhibitions, etc. Incorporators, George Paddock, Angus Sinclair and James R. English.

St. Louis, Mo.—H. Gerdelman is to remove his garage from 4112 Olive street to 4630 Olive.

Southport, Conn.—John W. Buckley has secured the agency for the Lozier for the coming season.

Chicago—The Hyde Park Garage and Livery Co. has been incorporated with a capital stock of $20,000.

Wilmington, Del.—The Vacuum Engine and Pump Co. has been incorporated with a capital stock of $100,000.

Lansing, Mich.—The C. R. Wilson Body Co., of Detroit, has increased its capital stock from $75,000 to $250,000.

Tonawanda, N. Y.—The Ech bicycle and motor store on Youngs street was burned out last week, with a loss of over $5,000.

Trenton, N. J.—The Lakewood Garage and Machine Co., of Lakewood, has been incorporated with a capital stock of $100,000.

New Orleans, La.—H. A. Eestard, who has a bicycle and motor car repairing establishment in the Masonic Temple, has enlarged his quarters.

Newark, N. J.—S. E. Oplinger, formerly connected with the Greene Motor Car Co., has joined the selling forces of the Ellis Motor Car Co., of 222 Halsey street.

Mexico City, Mex.—In the future the White steamer will be represented in this city. Mohler & DeGress have just closed a contract for the agency for the machine during the coming year.

Binghamton, N. Y.—P. C. Walster has leased the building at 33 State street, and after the necessary alterations will use it as a paint room for the decoration of motor cars, cabs, carriages, etc.

Spokane, Wash.—A motor livery and bus line is to be operated between Metaline and Colville. Two 40-horsepower cars, each with a capacity of twelve passengers, and a 4-ton freight truck will be used on the line.

New York—The first plans for a new building filed in 1908 provide for the improvement of William Waldorf Astor's property at 207-209 West Ninety-eighth street by the erection of a three-story garage for P. C. Long, who has leased the land for a term of years.

Akron, O.—The Akron Automobile Garage Co. has opened its new building. The concern has the agencies for the Baker electric, Oldsmobile and Franklin cars. A. Auble, Jr., is the president and general manager of the company, F. C. Wood secretary and treasurer and E. E. Buckmann the superintendent.